

SOAP

HOUSTON PUBLIC LIBRARY
HOUSTON, TEXAS
No 15 '51

and SANITARY CHEMICALS



In this issue...

Colgate-Palmolive-Peet's
new plant in Kansas City

* * *

Oil Chemists meeting told
of new non-ionic detergent

* * *

Effect of water hardness
on a quaternary germicide

* * *

What the consumer looks
for in buying liquid soap

Cover photo ... E. H. Little, president of Colgate-Palmolive-Peet Co., Jersey City, N. J., has a career with the firm that stretches back almost 50 years. He joined the original Colgate company in 1902 as a salesman in North and South Carolina. After holding a number of district managerships, he eventually became assistant sales manager (1926), a director in 1927, vice-president in 1933 and president 1938. Mr. Little is a past president of the Assn. of American Soap & Glycerine Producers, Inc.

NOVEMBER 1951

To replace the unusually high priced
Natural Oils —

GERANIUM
BERGAMOT
VETIVERT
YLANG

We offer you
5 top-quality
Synthetics



With prices on these important perfumery oils steadily advancing, we feel sure you will be interested in our new line of synthetics. Despite their economical price (from 50% to 80% less than the natural oils) we know you will find them most valuable when used either alone or with the natural oils to produce the very finest perfumeries. You can't afford to miss this opportunity to test these new synthetics yourself! Write, wire or phone today for samples of:

OIL GERANIUM SYNTHETIC SUPERFINE • RANUM (New Synthetic Geranium)
OIL BERGAMOT SYNTHETIC 1950 • OIL VETIVERT SYNTHETIC SPECIAL
OIL YLANG SYNTHETIC SUPERFINE

AROMATIC PRODUCTS, INC.

15 East 30th Street, New York 16

CHICAGO • DALLAS • MEMPHIS • PITTSBURGH • LOS ANGELES

LUDOX*
COLLOIDAL
SILICA makes
the difference
.....and makes

an Excellent
SLIP-RETARDANT

PERMA
GLO^{★ P.G.L.}
WAX

Perma-Glo Wax, either Formula P.G.L. or W.R.L., are superior floor waxes. Liquid Self-Polishing, they give floors that high lustre hardness that only formulas containing genuine carnauba wax can give.

Perma-Glo Wax is non-tacky. It spreads easily and smoothly, giving better protection, traffic resistance and uniformity. Perma-Glo

COLLOIDAL SILICA

For slip resistance, you can't beat these fine waxes. Colloidal Silica makes the difference! Now, with the addition of this ingredient, the slipperiness associated with carnauba waxes, has been replaced by slip retardance which has earned the listing as an anti-slip material by the Underwriters' Laboratory.



Ludox Colloidal Silica, a product and Trade Mark of E. I. Du Pont de Nemours & Co., Wilmington, Del.

wax may be shipped in the wintertime because it is not affected by freezing. Perma-Glo Wax (W.R.L. or P.G.L.) gives you beauty, durable wear, floor protection and is slip-retardant. Write for samples today!

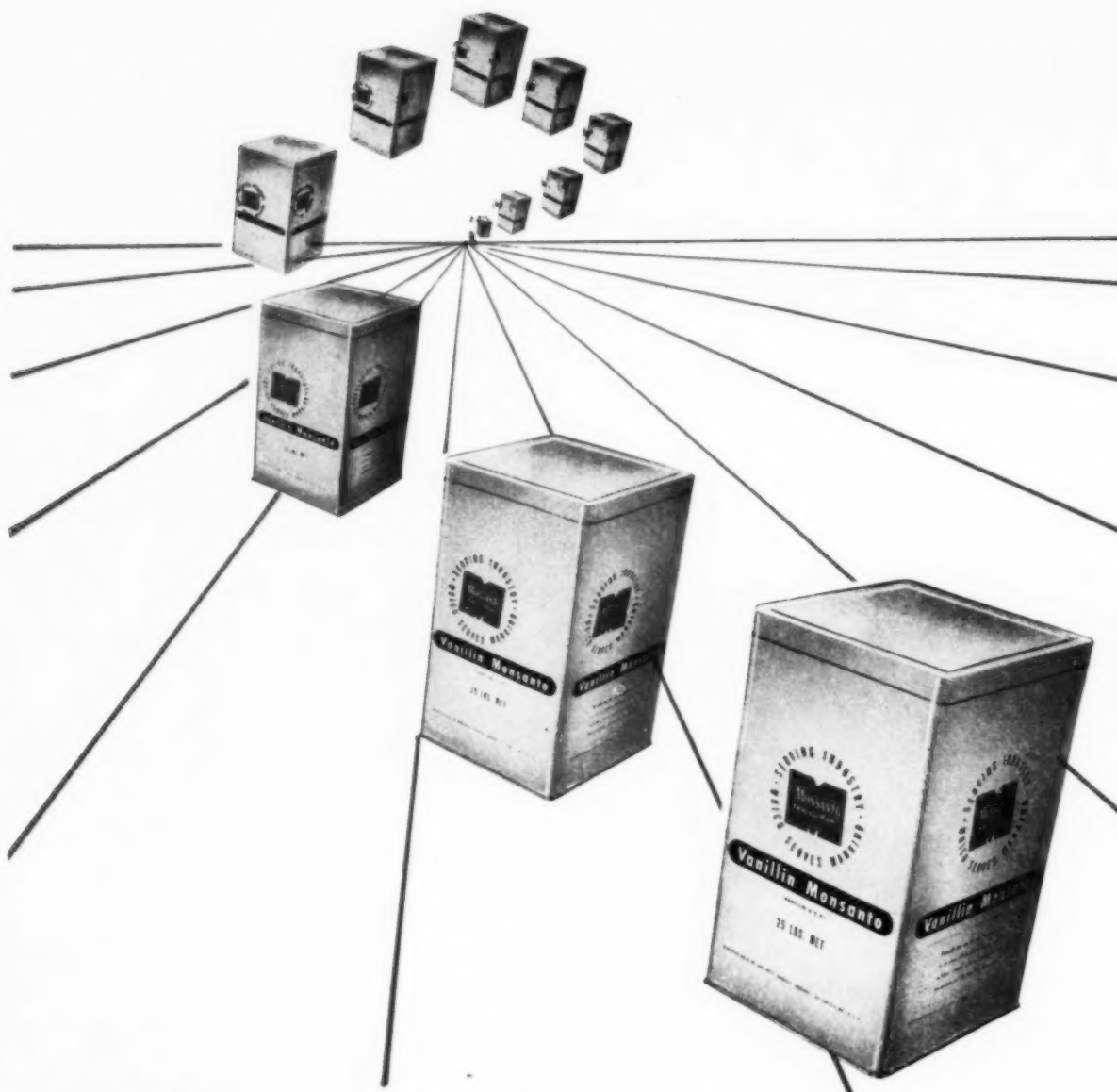
Perma-Glo plus Colloidal Silica are identified as either P.G.L. or W.R.L.

* Trade Mark Registered U. S. Pat. Off.

FULD BROTHERS,
 MANUFACTURING CHEMISTS
 Warehouses in Principal Cities



INCORPORATED
 702-710 S. WOLFE ST., BALTIMORE 31, MD.
 West Coast Plant: Los Angeles, Calif.



More Monsanto Vanillin coming!

Construction workers are busy today erecting a new Monsanto plant for the production of vanillin. The expanded output will be available to add flavor or aroma to your pharmaceuticals or soaps early next year. The new vanillin production also will release facilities for the manufacture of more Ethavan. Thus, the project will relieve shortages of both Monsanto Vanillin and Monsanto Ethavan.

The additional production will maintain the high standard of purity that has made Monsanto Vanillin preferred by drug and cosmetic manufacturers for nearly 35 years. Monsanto Vanillin, having true flavor and aroma, always is uniform . . . always dependable in your formulations.

For product information on Monsanto Vanillin or other Monsanto flavor and aroma chemicals, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

MONSANTO FLAVOR and AROMA CHEMICALS

Coumarin Monsanto — Often used to "fix" delicate flavors of Ethavan and vanillin.

Ethavan — Monsanto's ethyl vanillin produces a distinctive vanilla-like flavor and aroma.

Methyl Salicylate — Synthetic oil of wintergreen.

Vanillin Monsanto — A delightful vanilla-like flavor and aroma.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

Ethavan: Reg. U. S. Pat. Off.



SERVING INDUSTRY . . . WHICH SERVES MANKIND

SOAP and SANITARY CHEMICALS

SOAP

Volume XXVII

Number 11

November 1951

and SANITARY CHEMICALS

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Published Monthly By
MAC NAIR-DORLAND COMPANY
254 W. 31 St., New York 1, N. Y.

Chicago Office:
333 N. Michigan Blvd.

Ira P. MacNair, Pres.
Grant A. Dorland, V. Pres. and Treas.



Subscription rates: U. S., \$4.00 per year;
Canadian, \$5.00; Foreign, \$6.00. Copy clos-
ing dates—22nd of month preceding month
of issue for reading matter and 10th of
month preceding month of issue for display
advertising. Entered as second-class matter
June 16, 1949, at the Post Office, New York,
N. Y., under the act of March 3, 1879.



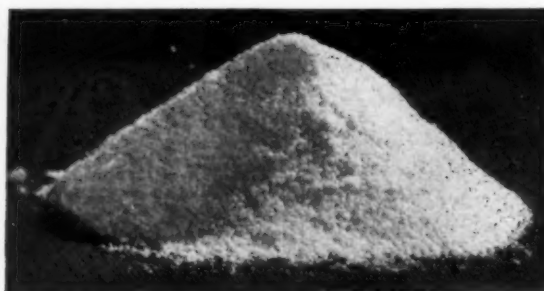
INFORMATION FOR COMPOUNDERS

These pages are published to bring you information on Monsanto products serving your industry. Here, you may find suggestions and data that will point the way to new or improved products and increased sales. Additional information on any product or application will be sent at your request.

SANTOMERSE No. 1...easy-to-blend detergent for use in versatile compounds



Granular Santomerse No. 1 is produced especially to give makers of cleaning compounds a detergent that blends perfectly with other ingredients, has less tendency to stratify and cannot be identified by visual



inspection. The photo at the left is of pure Santomerse No. 1. At the right, you see a compound of 40% granular Santomerse No. 1, 40% Monsanto sodium tripolyphosphate and 20% soda ash. Can you see any difference?

Because of its versatility in form and performance, Monsanto Santomerse No. 1 is the keystone of many compounds designed for detergency, penetration, dispersion, emulsification and spreading. It is an all-purpose detergent that efficiently serves numerous ways in industry, agriculture and homemaking.

Santomerse No. 1 is an anionic detergent with a minimum of 40% active alkyl aryl sulfonate, the remainder principally being neutral inorganic builders. This is the combination that is best for high efficiency and economy. It is compatible with other detergents and with builders. Since it is free-flowing, it is easy to compound into mechanical mixtures of uniform quality with almost any kind of blending equipment.

Santomerse No. 1 is effective in hard or soft water, in acid or alkaline baths, in hot or cold solutions. It prevents the formation of insoluble curds in hard water. Santomerse No. 1 can be used in applications where pH is important. It does not affect the pH to any marked degree, but usually assumes the pH of the solution in which it is used.

Properties of Santomerse No. 1

Chemical nature—Alkyl aryl sulfonate.
Available forms—Flake, granular, beads, powder.
Color, dry—Light buff to white.
Color, 1% solution—Clear, essentially colorless.
Odor, dry—Very slightly aromatic.
Odor, solution—None.
Active content—40%.
Ash content—68%.

Alcohol insoluble—60%.

pH value—(1% solution in distilled water @ 25° C.) —7.5 to 8.5.

Approximate apparent density—Light-density flake, 0.36-0.42 gms/cc.; heavy-density flake, 0.48-0.55 gms/cc.; granular, 0.55-0.60 gms/cc.; spray-dried (in drums), 0.09-0.10 gms/cc.; spray-dried (in bags), 0.10-0.15 gms/cc.

Santomerse No. 1 is warehoused in 13 cities throughout the United States and your orders will be filled promptly from the point nearest to you.

If you want technical assistance in formulating compounds for specific applications of detergents or wetting agents, contact the nearest Monsanto Sales Office. Mail the coupon for a free copy of the Monsanto booklet, "Santomerse No. 1 All-purpose wetting agent and detergent."

These uses may suggest ways SANTOMERSE No. 1 can serve you



Agricultural Sprays

Used as a wetting and dispersing agent, Santomerse No. 1 increases the effectiveness of the spray.



Dairy Cleaners

Santomerse No. 1 adds to the efficiency of acid, neutral and alkaline dairy cleaners.



Railroad Car Cleaners

Santomerse No. 1 improves the detergency of acid-type cleaners to remove scale and road grime.



Dehairing Hogs

Santomerse No. 1 in the scalding vat speeds up the removal of hair and scurf.



Household Cleaners

Santomerse No. 1 formulations make excellent cleaners for home laundering, dishwashing, floor and woodwork cleaning and in numerous other cleaning jobs.



Metal Industry

Santomerse No. 1 in the acid bath for cleaning, treating or pickling metal improves operations and the quality of the work.

SANTOMERSE 80, new detergent, reduces bulking

Monsanto's new Santomerse 80 is an alkyl aryl sulfonate in concentrated form. It packs extra efficiency in small bulk to bring savings in containers, storage and handling. In addition, Santomerse 80 offers greater flexibility in formulations. Santomerse 80 is identical with Monsanto's widely used Santomerse No. 1 except in the amount of active ingredient. Santomerse No. 1 has a minimum of 40% active alkyl aryl sulfonate. Santomerse 80 has double that percentage of alkyl aryl sulfonate, the remaining 20% being principally neutral inorganic builders.

In general, Santomerse 80 can be used in the same applications as Santomerse No. 1 in formulations, except for the proportions. Santomerse 80 is available in flake form and can be mixed mechanically on most blending machines. It blends easily with phosphates, carbonates and silicates.

For information on Santomerse 80 or for technical assistance in formulating cleaning compounds, contact the nearest Monsanto Sales Office or write Monsanto Chemical Company, Phosphate Division, St. Louis 4, Missouri.

MONSANTO DETERGENTS penetrants, wetting agents

Anionic

Santomerse * No. 1
Santomerse 80
Santomerse S
Santomerse 30X
Santomerse No. 3
Santomerse No. 3 Paste
Santomerse D

Nonionic

Sterox * CD
Sterox SE
Sterox SK
Sterox No. 5
Sterox No. 6

Technical assistance available to compounders

If you have a problem of developing a compound with specific qualities, you may have the counsel of Monsanto technical men. This service costs you nothing... puts you under no obligation.

For details on Monsanto's technical service, contact the nearest Monsanto sales office listed above the "M" in the right-hand column of this page.



Dust in dry detergent compounds is controlled by the addition of a small amount of Sterox CD.



Sudsing is controlled by Sterox CD, a 100%-active detergent, surface-active agent and emulsifier.

STEROX CD, high in detergency value, controls dust and suds

Sterox CD, 100%-active detergent, controls both dust and suds. That makes it especially valuable in the formulation of compounds for automatic laundries or for dishwashing machines. For products designed for uses where dust is objectionable or excessive foam hampers operations, Sterox CD is a real asset to compounders.

Sterox CD is a 100%-active nonionic. It is a liquid that blends readily with soap, carbonates, silicates, phosphates and all synthetic detergents. Its performance is efficient in hot or cold solutions... in hard or soft water.

This Monsanto product is compatible with cationic-type detergents and with anionic synthetics and soaps. A few of the many applications in which Sterox CD serves efficiently are: Commercial and home laundry compounds, dishwashing compounds, metal cleaning and treating, paint and wall cleaners, textile processing, paste cleaners, barrier creams, detergents for sanitation, floor cleaners, liquid detergents and in the preparation of non-dusting, non-sudsing detergents.

PHYSICAL AND CHEMICAL DATA ON STEROX CD (typical values)

Composition.....Polyoxyethylene ester
Appearance.....Pale-yellow to light-amber liquid
Odor.....Mild fatty odor
Sp. Gr. at 25° C.....1.060
Viscosity
Saybolt Furl Seconds:
at 70° F.....250
at 100° F.....100
at 210° F.....20

Pour Point.....50° F.
Flash Point.....518° F.
Hydroscopicity.....Slightly hygroscopic

SOLUBILITY

Miscible in acetone, benzene, carbon tetrachloride, ethanol, xylene.

Partially Soluble in ether (ethyl), gasoline, kerosene, methanol, mineral spirits.

Mail the coupon for Monsanto Technical Bulletin P-129 and get full details about Sterox CD.

.....

MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second St., St. Louis 4, Missouri. District Sales Offices: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

¹Reg. U. S. Pat. Off.



SERVING INDUSTRY... WHICH SERVES MANKIND

Mail coupon for FREE literature on detergents

- ☐ Booklet—"Santomerse No. 1 All-purpose wetting agent and detergent."
- ☐ Technical Bulletin P-123—Describing Santomerse D, Santomerse S, Santomerse No. 3 and Santomerse No. 3 Paste.
- ☐ Technical Bulletin P-129—Describing the properties and uses of Sterox CD.
- ☐ Technical Bulletin P-133—Describing Sterox SE and Sterox SK.

- ☐ Technical Bulletin P-136—Describing Sterox No. 5 and Sterox No. 6.
- ☐ Technical Bulletin P-122—Describing Detergent MXP.
- ☐ Technical Bulletin P-142—Describing Emulsifiers H, L, M and R.
- ☐ Technical Bulletin P-146—Covering the use of Santomerse S for metal processing in acid media.

MONSANTO CHEMICAL COMPANY, Phosphate Division
1700 South Second Street, St. Louis 4, Missouri

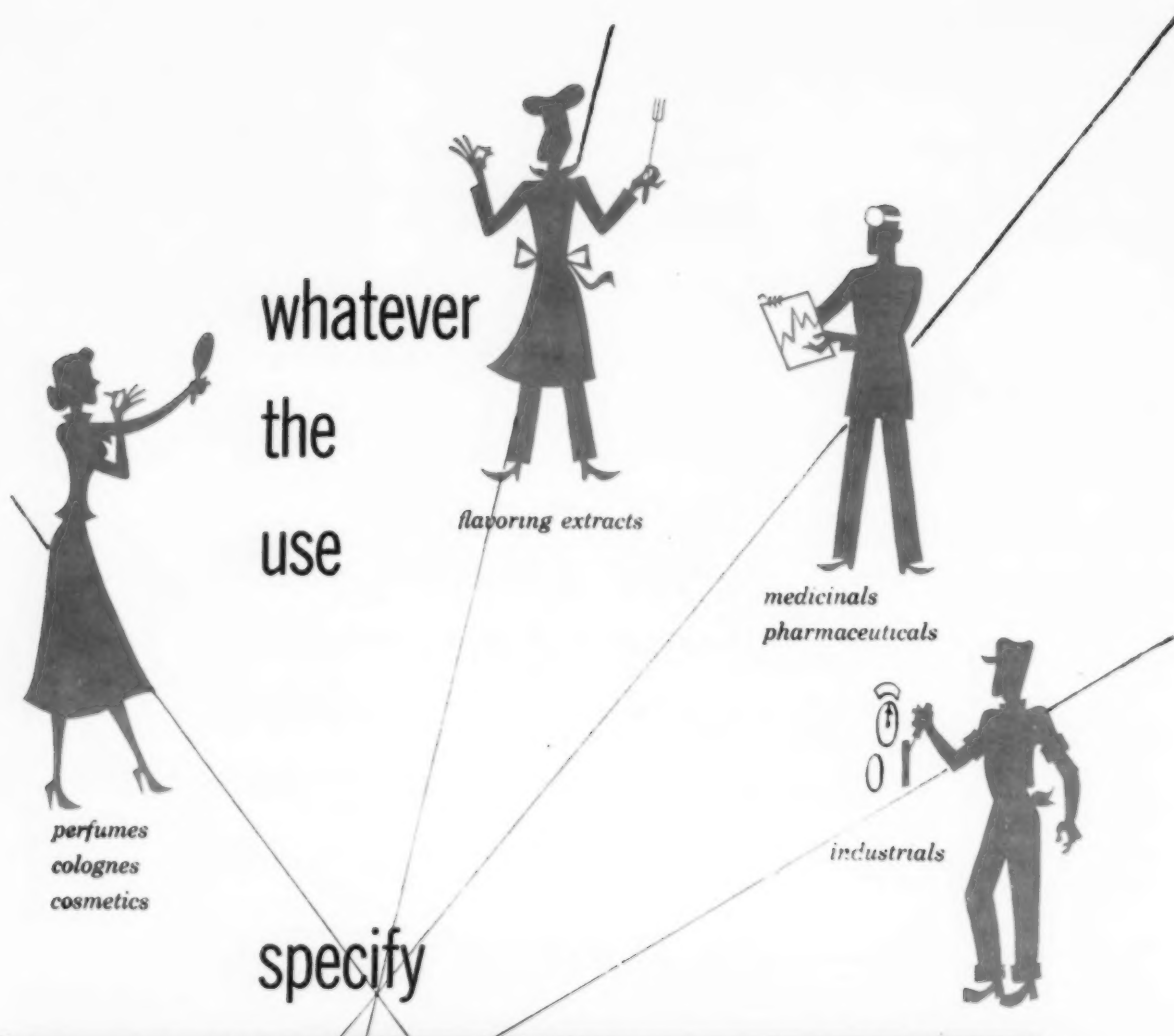
Please send, free and without obligation, the literature checked at the left.

Name.....Title.....

Company.....

Street.....

City.....Zone.....State.....



CSC ROSSVILLE ALCOHOLS

Rossville Hexagon® Cologne Spirits... Rossville Algrain Alcohol U. S. P.
... and Rossville Gold Shield® Alcohol U. S. P. — each of these fine
alcohols is the acknowledged standard of quality in its respective fields
of usefulness.



COMMERCIAL SOLVENTS CORPORATION
17 EAST 42nd STREET, NEW YORK 17, N. Y.

PRODUCTS OF THE INDUSTRIAL CHEMICAL DIVISION: Ethyl Alcohol and Derivatives
Acetone • Butanol and Derivatives • Crystalline Riboflavin • Methanol • Amines • Nitroparaffins

SOAP and SANITARY CHEMICALS

**HYSAN INVITES
LIVE-WIRE DISTRIBUTORS
in Selected Territories...**

**to climb aboard one of the
HOTTEST PRODUCT
PROMOTIONS
in Sanitary Supply History!**

... here's the Product!

A product that **REALLY** removes the **SOURCE** of toilet-room odors and infectious disease germs... has always been top-dog demand in this business. That **SOURCE**, as you know, is the smelly crust, stains, rust and organic deposits in the flushing of toilet bowls—in the traps—in the invisible outlets of urinals.

At long last, you have a product that **TOTALLY** eliminates this odor-disease-germ source and crab lice shelter. **ZAX**—with free bowl mirror and mops—**DOES IT!** It's the revolu-

IT SIZZLES!—because it is currently the most wanted single item in the entire sanitary supply field—**BAR NONE**

tionary **SUDSING**, white emulsion **DISINFECTING** bowl sanitizer that swabs off the noxious crust by instant chemical action. It deodorizes, descales, cleanses, disinfects... replaces harmful single-action acids that neither get rid of the disease germs nor remove source odor.

The **ZAX DEMONSTRATOR KIT**—see below—proves before the prospect's astonished eyes that **ZAX** does what no other bowl product can do. Proves it in minutes—to clinch the sale. After that

Zax
4-WAY
BOWL SANITIZER



ZAX repeats and repeats and repeats!

IT CAN'T MISS because

It within 60 days it does not prove to be one of your biggest money makers—we take back the merchandise. You can't "get stuck".

... here's the Promotion!

There is more brain power, **SALES POWER**, push and **PROVEN SUCCESS** in this **ZAX PROMOTION** than anything you or we have ever seen in the last

two decades. The **NATIONAL ADVERTISING**—in color—reaches exactly the profitable institutions—the schools, cafes, government, hotels, hospitals and industrials you sell. It spreads out the **WEL-**



COME MAT for your salesmen.

The **smashing DIRECT-MAIL CAMPAIGN**—a tested-out masterpiece of successful salesmanship—is given to you **FREE**—with your name and address imprinted. We not only show you how to get business by mail, but **WE DO IT FOR YOU**.

The **Proof-of-the-Pudding** **DEMON-**

STRATOR KIT—with mop and bowl mirror—closes by **actual count** **BETTER THAN 4** out of 5 rabbit-quick demonstrations. As a door opener to get your line in, to sell buyers you never could interest before, to hire and hold better salesmen... this demonstrator kit—backed by the **FREE ADVERTISING**—outranks any past success in sanitary supply history. That you will prove at our risk. But first, **SEND FOR BROCHURE.**



... here's the Brochure!

It **wraps up** the whole promotion quick and clear. When you get it you will see the biggest eyeful of money making merchandising ever presented in a single package. If you paid \$50 for this brochure as a



IT'S FREE!
—and worth its weight in gold!

blue print for sanitary supply merchandising it would be a bargain. Get it free—**IF YOUR TERRITORY IS OPEN**. Wire, telephone or **CLIP THE COUPON**. We'll send the brochure by return mail.

Clip this to your Letterhead

To: **HYSAN PRODUCTS COMPANY**
932 W. 38th Place
Chicago, Illinois

SEND THE BROCHURE

Our territory is

Company

Street

City

By





**SUPER SAFE
UNDER
WET SHOES**

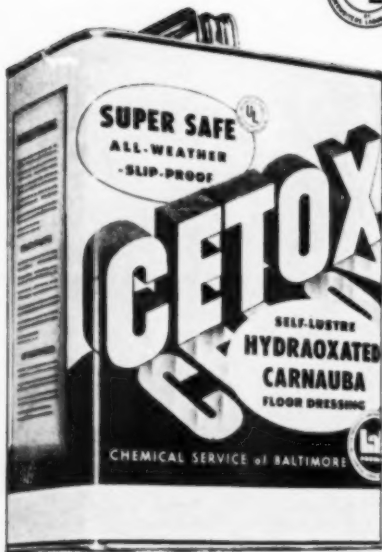
DAZZLING SELF-LUSTRE

SUPER SAFE, RAIN OR SHINE

SAFE TO WALK ON, SAFE FOR FLOORS

CETOX

**the Hydrooxated carnauba
floor dressing that's extra safe all year 'round!**



CETOX makes all floors super safe —especially throughout year's 30% inclement weather when the risk of slips and falls is greatest.

Super safe—even under wet shoes

Normally, water underfoot acts as a lubricant. CETOX is extra safe under spilled or tracked in water. You simply won't slip, because

Listed by
**UNDERWRITERS'
LABORATORIES, INC.**
as anti-slip floor
treatment material.

Tested-approved by
**YOCK RESEARCH
CORPORATION**
for American Hotel
Association.

CETOX contains Carnauba with the slip hydrooxated out of it. No silicas, or abrasives added. *It's hydrooxated super safe!*

Beautiful and safe

Self lustre CETOX makes floors dazzling bright. It is a wet mop proof, tough wearing, dirt resisting, protective floor dressing that may readily be removed with the use of a mild detergent. In every way, CETOX is superior. For safety sake . . . put CETOX on your floors.

Write for complete information and sample. Do it today!



Chemical Service of Baltimore
HOWARD & WEST STREETS • BALTIMORE 30, MARYLAND
MEMBER OF NATIONAL SAFETY COUNCIL.

for DETERGENCY

It is effective on an unusually wide variety of soils. NYTRON has excellent power to remove oil and grease from fabrics, surfaces, metal parts. It cleans efficiently in cold, as well as warm or hot water and retains its detergent action when used in either acid or alkaline mediums.

for HARD WATER ACTION

NYTRON is more economical because increased quantities do not have to be added to compensate for water hardness; completely prevents the formation of scum, grease rings, streaks, spots.

for CHEMICAL STABILITY

Remains chemically stable over a wide range of temperatures, acidity or alkalinity.

for RAPID SOLUBILITY

NYTRON goes into solution almost instantly in hot or cold water and will not "salt out" in concentrated solutions of many acids, alkalies or metallic salts.

for QUICK, THOROUGH RINSING

NYTRON rinses promptly and completely in cool or even cold water, does not leave an insoluble deposit.

for REDUCED WETTING TIME

Effectively lowers surface tension, even in extremely low concentrations. It improves the action of acid and alkaline solutions over a wide range of temperatures.

for FOAMING

NYTRON will foam in any normal concentration of acid or alkali, in distilled water or sea water, in ice cold or boiling water.

for IMPROVING PERFORMANCE OF SOAP

Improves quality and lowers cost when used to partially or completely replace high-priced soap.

NYTRON

TRADE-MARK REG. U. S. PAT. OFF.

FOR PERFORMANCE

because...

**NO OTHER WETTING AGENT-
DETERGENT MATCHES NYTRON'S
COMBINATION OF PROPERTIES**



**FREE SAMPLES ...
MAIL COUPON**

SOLVAY SALES DIVISION, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.
I want to know more about NYTRON, the Synthetic Organic Detergent with the exclusive combination of properties. Send me a free sample plus non-technical information and specific technical data.

Name _____ Title _____
Company _____ Address _____
City _____ Zone _____ State _____
SSC-11

CAND-DOX

Candy's Wax
with LUDOX* added

Candy's **NEW NAME** for

the new floor treatment for

Increased Anti-Slip

Greater Durability

Lower Floor Maintenance Cost

GRADES

CAND-DOX #CS

Originally offered as CANDY'S SUPREME
Special WR-AS in July 1950

CAND-DOX #BB

Originally offered as BRIGHT BEAUTY
Special WR-AS in June 1951

CAND-DOX #CS and BB are made in any total
percentage of solids 8% to 18% and in 24%
concentrate.

CAND-DOX #CS is slightly more durable and
higher priced than CAND-DOX #BB in like per-
centage of total solids.

CAND-DOX floor treatments represent the finest products available where a higher than minimum recognized standard of anti-slip quality is desired. The resultant films from the use of these products are **HARD**, non-tacky, and will withstand wear, dirt and discoloring traffic marks.

DURABILITY and **ANTI-SLIP**... CAND-DOX products include a compensating factor—LUDOX*—in itself harder than wax. The addition of LUDOX* to the proper wax bases, perfected purposely to accommodate this additive, causes a greater coefficient of friction and therefore greater safety underfoot.

WATER RESISTANCE and **REMOVABILITY** in proper balance are very important in every maintenance program. In the development of the wax emulsion bases that go into CAND-DOX floor treatments, the important all-around high qualities of our (Standard) CANDY'S SUPREME, BRIGHT BEAUTY and other well known and accepted waxes were taken into consideration and accomplished in the final CAND-DOX products containing the new bases plus additive.

BEAUTY of floors maintained with CAND-DOX floor treatments, which are both hard and very anti-slip, is no less than remarkable and equal to the lustre for which our products have long been famed. The same buffing can be applied, if desired, and the same gloss will result.

Our policy in regard to use of new additives to our floor waxes has always been clear-cut... if a definite improvement can be accomplished we endeavor to formulate and combine new ingredients in such a way as to conform to our very high standards of product function. These standards in no case are ever sacrificed to climb on any "band-wagon" of sales appeal.

The laboratory work in ours or any organization is very important and the starting point for research and development of new useful products. However, **FIELD TESTING** is the real proof of the real value of any floor treatment. CAND-DOX floor treatments have been thoroughly field tested and are now being sold in quantity by many of our distributors, with success—again proving merit in **FIELD USE**.

** CAND-DOX contains CANDY'S wax emulsion with LUDOX* Colloidal silica added in such proportion as to fully deliver the usefulness of this additive to floor wax. *Trademark of E. I. du Pont de Nemours & Co., (Inc.) Reg. U. S. Pat. Off.

CAND-DOX is available only for private brand resale except for experimental accounts in Chicago essential to research.

Why not write us today for free samples and prices so that you can make your own **FIELD TESTS**?

The most complete line of water emulsion waxes of the highest quality available anywhere

CANDY'S SUPREME (Standard)
CANDY'S SUPREME Special WR
CANDY'S DELUXE
BRIGHT BEAUTY (Standard)
CANDY'S #640
#CS CAND-DOX
#BB CAND-DOX

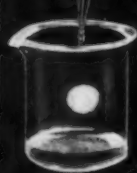
All the above CANDY products are listed by Underwriters' Laboratories as "anti-slip floor treatment materials."

Wax Specialists for over 60 years
Candy & Company, Inc.
2515 W. 35th ST., CHICAGO

COMPARING
VISCOSITIES
OF COMPOUNDED
LIQUID CLEANERS
containing

5%
NINOL
1281

5%
ORDINARY
SYNTHETIC



for
HIGH VISCOSITY in
LIQUID CLEANERS

use



1281

a non-ionic detergent with
high THICKENING POWER

Increase the sales appeal of your liquid cleaner line by eliminating that thin, watery look. NINOL 1281 in your formulations will give good "body" both to *Synsoaps** and to all-synthetic liquid cleaners (such as dishwashing detergents, floor cleaners, shampoos, etc.).

Besides thickening action, NINOL 1281 also possesses excellent detergency, rinsibility and rust-inhibiting qualities that make it unique among the synthetics.

OTHER



PRODUCTS FOR SPECIAL THICKENING JOBS

NINOL 2012A

A non-ionic detergent with powerful thickening action for solutions of other synthetics

NINOL 201

For thickening and clarifying liquid coconut soaps.

NINOL 128

A base for low-priced viscous non-ionic bar glass cleaners.

* SYNISOAPS =
Soap + Synthetics

NINOL

Detergents ~
~ Emulsifiers

SEND THIS COUPON TODAY!

NINOL LABORATORIES, DEPT. 5
1719 S. CLINTON ST., CHICAGO 16, ILL.

Gentlemen:

Please send me, at once, full information
about the use of

☐ 1281 ☐ 128 ☐ 2012A ☐ 201

in formulating liquid cleaners, together with
a working sample.

NAME _____

TITLE _____

COMPANY _____

STREET & No. _____

CITY _____

ZONE _____

STATE _____

NINOL LABORATORIES

1719 S. CLINTON • CHICAGO 16 • PHONE CHESAPEAKE 3-9625

In Canada: Chemical Developments of Canada, Ltd., Toronto 17, Ontario

General Mills Says:

ALIPHAT 45-A

- ★ **LOWER COST**
- ★ **EASIER HANDLING**
- ★ **INCREASED PRODUCTION**

Here is a new opportunity to save money on rosin. General Mills introduces Aliphat 45-A for the first time. It is a new grade of distilled tall oil rosin having a dry solid texture similar to fudge candy. Packaged in unlined fiber drums, Aliphat 45-A lends itself to easier and speedier handling. Thus, besides the savings in sale price, you can count on sizable savings up to 1.5 cents a pound as a result of lower labor costs and increased kettle production.

Aliphat 45-A is an economical source of rosin for the production of fine quality rosin ester varnishes and enamels whose drying properties are enhanced by the presence of approximately 22%

WW-WG
COLOR GRADE
DISTILLED TALL OIL
ROSIN
COSTS ONLY
6³/₄c A POUND FOR
CARLOADS OF DRUMS



	Guaranteed Specifications	Typical Analysis
Color (Gardner 1933)	12 max.	9
Color (U. S. Rosin)	—	WW-WG
Rosin Acids	67-74%	70%
Fatty Acids	—	25%
Unsaponifiables	6.0% max.	5%
Acid Value	175-185	180

linoleic acids. Excellent gloss oil also can be produced from it. Aliphat 45-A is a splendid source of rosin for the production of liquid, jelly, flake and bar soaps. Order a drum today for plant tests and see for yourself the outstanding advantages which Aliphat 45-A offers.

General Mills, Inc.
CHEMICAL DIVISION
400 Second Ave. So., Minneapolis 1, Minn.

WRITE FOR SAMPLES AND LITERATURE TODAY

**FOR Quality THAT BUILDS
CUSTOMER SATISFACTION
AND REPEAT PROFITS...**

Feature **PURO** *Deodorants*

MORE ECONOMICAL... LONGER LASTING

MADE OF 100% PURE PARADICHLOROGENE FUSED
WITH FINE LONG LASTING PERFUME OILS ON HUGE
MODERN POWER PRESSES. ATTRACTIVELY PACKAGED!



**OUTSTANDING SELLER
FOR EVERY PUBLIC USE**

PURO 4 OZ. DEODORANT BLOCKS—

Most popular size and shape, for urinals and general use. Made to U. S. Navy specification No. 51-D-23 (Int.). Attractive cellophane wrap and special tube containers protect from evaporation. Available in pleasant Surf, Lilac and Rose colors. Economical — long lasting.



**EXTRA PROFITS FROM
THIS EXCLUSIVE SPECIALTY**

PURO SANA-BOLE DEODORANT—

..... Banishes odors at their source. Patented "Snap-on" wire hanger holds cake securely in bowl and practically out of sight. Delicate flower-like fragrance. Ideal for home, hotel and public toilets—a much larger market than urinal blocks. A sensational repeater, 4 oz. cake.



**NEW HEAVY DUTY
HANGER BLOCKS**

PURO JUMBO DEODORANT BLOCKS—

By popular demand, now available in 8, 12, 16 and 24 oz. cakes which are effective longer over a larger area. The three larger blocks come in convenient hanger containers. Cellophane wrap prevents evaporation before use. In clean smelling Surf, Lilac and Rose.

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(Established 1929)

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92.1% SALES INCREASE ON SULFRAMIN* E LIQUID

REPORTED BY DISTRIBUTORS

BIG DEMAND DUE TO OUTSTANDING DETERGENT PROPERTIES

The demand for Sulframin* E Liquid increases continually. Distributors' sales were 92.1% higher during the same months of 1951 than during the same period in 1950 . . . despite a business slump in the textile industry. Sulframin* E is a best seller because it is a proven money-saver in many textile operations — from raw wool scouring to print washing. Full details on request.

*Distributors'
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Combines the wetting and detergency of the alkyl aryl sulfonates with the hardwater resistance and stability of the polyethylene oxide condensates. Ready to use. Write for details!

ULTRA

Chemical
WORKS

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**MAKES THESE
WAXES**
on purpose

200
500
700
1035
23
36

THE PURPOSE being to develop and manufacture the finest microcrystalline waxes available in the wax market today. To achieve this end, the Petrolite refinery has been designed strictly as a wax refinery —with Petrolite, better waxes are the achievement, not a by-product. All we ask is that you prove this to your own satisfaction...check the specifications...send for samples...ask for our descriptive technical bulletins...let us know if we can give you technical assistance toward the use of our waxes in your product.

SPECIFICATIONS

PETROLITE CROWN	Melting Point °F	Penetration with 100 gms.	Color N. P. A.	Acid Number	Sapon. Number
200	190/195	10 max.	Brown	Nil	Nil
500	190/195	10 max.	2 to 2½	Nil	Nil
700	190/195	5 max.	2 to 2½	Nil	Nil
1035	195/200	2 max.	2 to 2½	Nil	Nil
*23	180 min.	4 to 6	4 to 5	20-25	55-65
*36	180 min.	5 to 7	5 to 6	30-35	75-85
★ EMULSIFIABLE WAXES					

PETROLITE Crown WAX

**PETROLITE CORPORATION, LIMITED
WAX DIVISION**

30 BROAD STREET, NEW YORK 4, NEW YORK • BOX 390, KILGORE, TEXAS
WV 50-3

NOVEMBER, 1951

for soaps and soap building



for soapless detergents



in cleaning compounds



in dishwashing compounds



for water softening



BLOCKSON Sodium Phosphates

Blockson has made substantial plant additions in its endeavor to keep up with the increasing demand for its SODIUM TRIPOLYPHOSPHATE, TETRASODIUM PYROPHOSPHATE, TRISODIUM PHOSPHATE and for its SODIUM POLYPHOS which is the Blockson brand name for a water soluble, glassy Sodium Phosphate with the desirable characteristics of Sodium Hexametaphosphate and Sodium Tetrakisphosphate.

BLOCKSON CHEMICAL COMPANY

JOLIET, ILLINOIS



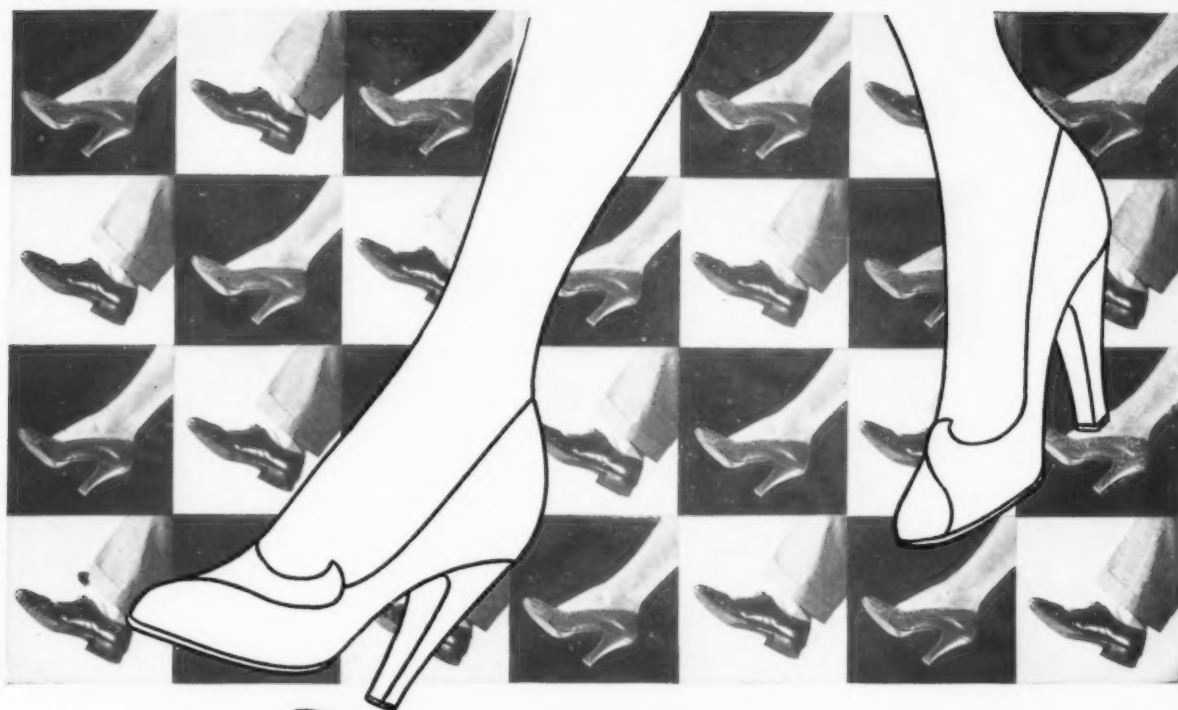
- Sodium Tripolyphosphate
- Tetrasodium Pyrophosphate, Anhydrous
- Sodium Polyphos (Sodium Hexametaphosphate) (Sodium Tetrakisphosphate)
- Trisodium Phosphate, Crystalline

- Chlorinated Trisodium Phosphate
- Trisodium Phosphate, Monohydrate
- Disodium Phosphate, Anhydrous
- Disodium Phosphate, Crystalline
- Monosodium Phosphate, Anhydrous

- Monosodium Phosphate, Monohydrate
- Sodium Acid Pyrophosphate
- Sodium Silicofluoride
- Sodium Fluoride
- Hygrade Fertilizer

Blockson Plant . . . Joliet, Ill.





Safer Footing

WITH WAXES CONTAINING ANTI-SLIP LUDOX®

WALKERS GET ADDED ANTI-SLIP SECURITY on waxed floors . . . when waxes are modified with Du Pont "Ludox." That's because hard, tiny particles of "Ludox" colloidal silica surround softer wax particles . . . press into them when stepped upon and help keep the foot from slipping.

NO WONDER MORE AND MORE stores, hospitals, schools and other industrial and public buildings are using waxes improved with "Ludox." For in addition to extra safety, they are fully equal to regular floor waxes in gloss, water-resistance, freeze-resistance and leveling.

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ASK YOUR WAX SUPPLIER about these waxes containing Du Pont "Ludox." Most likely he can help solve your floor-wax problems. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., Wilmington, Delaware.



LUDOX
REG. U. S. PAT. OFF.
COLLOIDAL SILICA

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

for dishwashing...

*nothing degreases
like mixtures
formulated with*

Nacconol*

AMERICA'S LEADING SYNTHETIC DETERGENT

Detergency, emulsification, water softening and the physical form you want... you get them all when you base your dishwashing mixtures on low-cost Nacconol.

Available for prompt, dependable delivery in Light Bead, Dense Bead or Flake form to suit your packaging and formula set-up.

Since the oldest and best-known synthetic detergent—Nacconol—costs no more, why be satisfied with a substitute? Get in touch with the nearest National Aniline office for prices, delivery and practical help on formulations for any purpose.

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ALLIED CHEMICAL & DYE CORPORATION

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*Reg. U.S. Pat. Off.



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NIALK

*Caustic Soda
Caustic Potash
Carbonate of Potash
Paradichlorobenzene*

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NIAGATHAL* (Tetrachloro Phthalic Anhydride)



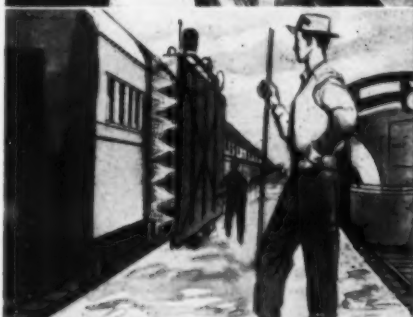
You get a head start when you use

D-40 DETERGENT



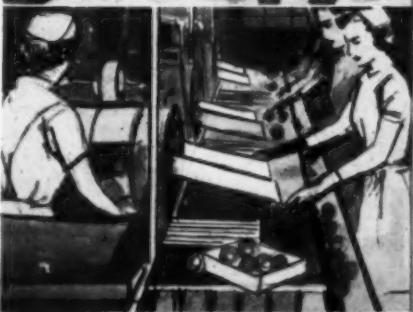
DETERGENTS FROM ORONITE have been performance-proved in hundreds of thousands of tons of household and industrial cleaning compounds. That's why compounders get a head start in the market when they use D-40—the detergent with a proved record of results.

Why be satisfied with less, when you can get detergents from Oronite—endorsed by leaders in the industry.



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For better compounds

use performance-proved detergents from Oronite—used in greater quantity and in more compounds than any other.

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MERCANTILE SECURITIES BLDG., DALLAS 1, TEXAS

for HIGH PURITY

Specify

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TRADE-MARK REG. U. S. PAT. OFF.

CAUSTIC

POTASH

- ★ 49-50% Liquid in Tank Cars
- ★ 45% Liquid in Drums
- ★ 90% Solid and Flake

LOW IN IRON and Other Impurities

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Soda Ash • Ammonium Bicarbonate • Para-dichlorobenzene • Ortho-dichlorobenzene • Monochlorobenzene • Methanol • Ammonium Chloride • Formaldehyde

Triple Victory

IN MACAULAY'S FAMOUS POEM, Horatius stood before the narrow bridge to Rome and saved the city by slaying Lars Porsena's three ablest warriors.

Now, no one's going to write poetry about IONOL® . . . the antioxidant that is proving so successful in essential oils manufacture . . . but there is a parallel!

IONOL is a determined fighter against color or odor changes due to oxidation. This tri-substituted hindered phenol maintains the stability of animal, vegetable and mineral oils . . . safeguards the purity of essential oil and fatty acid products.

And a little IONOL goes a long way . . . less than one per cent increases oxidation induction periods by as much as 275 hours.

While the demand for IONOL currently exceeds production capacity, it will pay you to give serious consideration to its advantages in your product development planning.

IONOL IS ALREADY IMPROVING THESE:

Pressure sensitive tape • Asphalt and rubber tiles • Drug sundries
Rubber coatings for wire • Light-colored extruded specialties
Swimming accessories • Play shoes

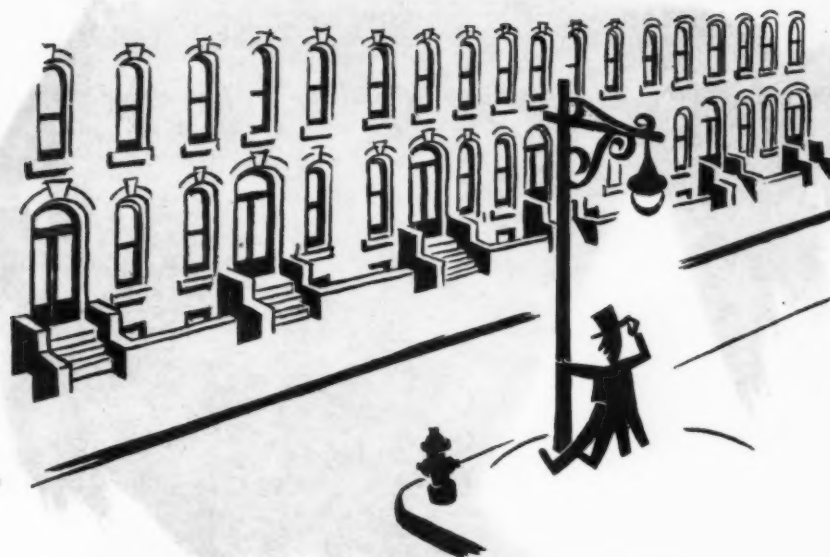
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Eastern Division: 500 Fifth Avenue, New York 18, N. Y.
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Be sure
you pick
the right
one...



If you manufacture hard metallic soaps, Woburn Palm Fatty Acid is the right one for you

Woburn Palm Fatty Acid is a double distilled vegetable fatty acid prepared from palm type raw materials. Compared to tallow fatty acids, which have a comparable titre and iodine number, soaps from this fatty acid have superior sudsing characteristics and wetting out power. You reduce processing and operating costs because it saponifies to completion rapidly with no need for salting out.

PALM FATTY ACID

Specifications	Maximum	Minimum
Acid Number.....	203.....	197
Iodine Value (wija).....	55.....	38
Titre °C.....	48.....	44
Color (Gardner 1933).....	5.....	—
Color (Lovibond 5 1/4").....	3.5.....	—
Moisture and Volatile.....	0.5%.....	—
Typical Composition		
		% Total Fatty Acids
Palmitic Acid.....		45
Stearic Acid.....		6
Oleic Acid.....		40
Linolic Acid.....		9

Six advantages to using Fatty Acids

1. Simplicity

The manufacture of soaps from Fatty Acids is not a difficult or complicated procedure.

2. Better Color

Soaps of an excellent color are produced from Fatty Acids because foreign matter and dirt particles, present in the original raw oils, have been eliminated.

3. Time Saving

The time of saponification is greatly re-

duced, since the glycerine is already removed, eliminating the need for a long "salting out" operation.

4. No Shrinkage

The entire fat component goes into the soap with Distilled Fatty Acids, while with oil, at least 5% is lost in glycerine.

5. Economy

Lower labor and equipment costs result, as well as a saving in steam, because

the same volume of soap is produced in less time (or a much larger volume in the same time.)

6. Better Control of the Finished Soap

Fatty Acids allow for complete saponification with an excess of only about 0.12% alkali. Woburn's rigid control system assures the soap maker of a more uniform product as the starting point for manufacture.

It's always to your advantage
to use Woburn Fatty Acids

WOBURN CHEMICAL CORP. (N.J.)



There's a Woburn fatty acid
for every soap need!

MAIL THIS COUPON TODAY

Woburn Chemical Corp. (N. J.)
1200 Harrison Avenue, Harrison, N. J.

Please send me, without charge, the Woburn Bulletin on Palm Fatty Acid.

Name

Title

Firm Name

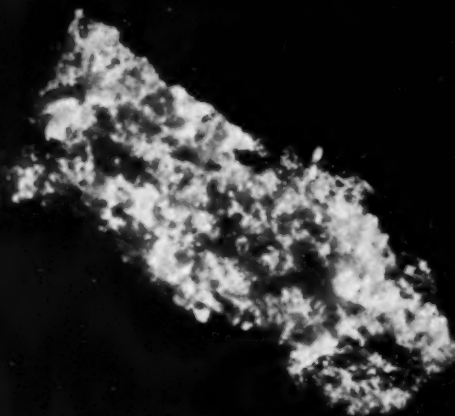
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Magnification of an ULTRAWET K flake.

**DETERGENT
DRY MIXING
PROBLEMS?**

*Look into
ULTRAWET K*



Want to get more flexibility and lower costs in your cleaning formulations? Then we have a hunch you will be interested in 85% active ULTRAWET K.

This alkyl aryl sulfonate has only 15% sodium sulfate which allows you freedom to select your own combination of builders and extenders. Costs can be pared too because ULTRAWET K's 85% active flake means a real saving when compared to less active flakes. Another plus for this concentrated synthetic detergent — it can be stored in a smaller space.

We'll be glad to send you a bulletin showing the effects of mixing equipment — and the effects of builders — on the densities of the final product. Write The Atlantic Refining Company, Chemical Products Section, Dept. D-1, 260 S. Broad Street, Philadelphia 1, Pa.

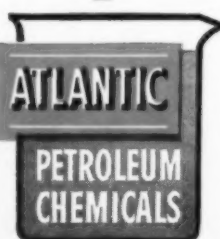
Without obligation, please send me further information on ULTRAWET K.

DEPT. D-1

Name _____

Company _____

Address _____



**SOME OF THE ATLANTIC PETROLEUM CHEMICALS
ARE CURRENTLY IN SHORT SUPPLY**

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change to...

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PERFECT FOR PERFUMING...

- LAUNDRY SOAPS
- WASHING POWDERS
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- POLISHES, ETC.

NOW, MORE THAN EVER, JAVONELLA OFFERS THESE IMPORTANT ADVANTAGES!

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Sample and
Quotation*

- It's a manufactured article . . . free from the price fluctuations of natural essential oils such as Citronella, Sassafras, etc.
- Its high quality never varies, enabling you to manufacture uniformly dependable products.
- Always lower in cost than the natural oils, particularly now with citronella prices on the rise, its use results in production economies and higher profits without lowering quality standards.



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....and finish fresh, too!

The development of a perfume that will stay fresh and unchanged throughout the shelf-life and use-life of soap products requires the technical know-how of master soap perfumers.

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521 WEST 57th STREET
NEW YORK 19, N. Y.



NOVEMBER, 1951

29



for building synthetic detergents

a wise choice



soluble silicates



Performance-wise: With synthetic detergents as well as with soap, PQ Soluble Silicates not only improve detergency but prevent the re-deposition of soil. Solid dirt is deflocculated so that it is removed and rinsed away.*

Profit-wise: Besides improving detergent power, PQ Soluble Silicates help to increase profits. Basically low in cost, they are the most effective means of producing better cleaning compounds at a minimum price.

The addition of silicates to synthetics depends on a number of factors; special silicates are necessary. We shall be glad to discuss the right silicate for spray dried methods or mixtures prepared in other ways. Choose PQ.

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1152 Public Ledger Bldg., Philadelphia 6, Pa.

1831 —
120th Anniversary
— 1951

*"Detergent Properties of Alkyl Aryl Sulfonate-Buildup Mixtures", From "Industrial and Engineering Chemistry", Vol. 42, May 1950. (Reprint on request.)

Investigate the advantages of new lauryl sulphate

sipon detergents

SIPON lauryl sulphates, when used as surface active agents, exhibit outstanding detergent, foaming, wetting and emulsifying properties under all conditions. Neither temperature variation nor the presence of inorganic salts (as in

hard water) materially affect performance. Shown below are only a few of their more general uses. In addition, special grades of SIPON are available to meet specific requirements.

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Ammonium
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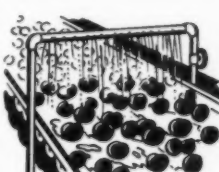
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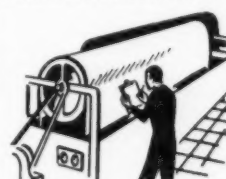
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Medicated Soaps

"There is a SIPON to meet every detergent need"

TECHNICAL SERVICE,

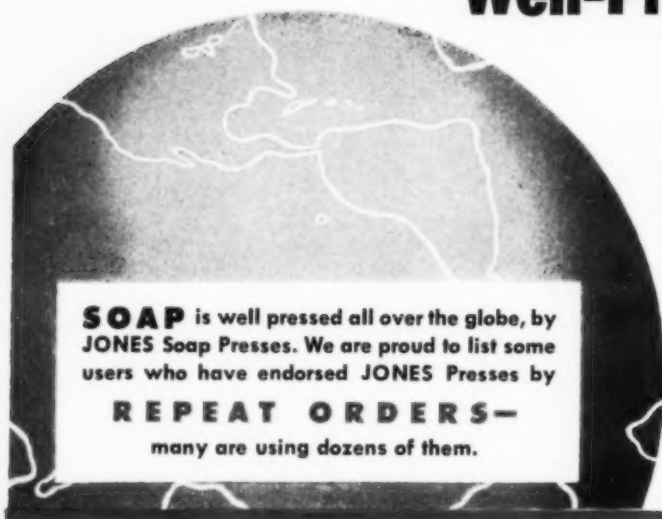
including formulae for finished products, is available. Do not hesitate to take advantage of the services of our technical staff. Write now for descriptive literature and prices.

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AMERICAN ALCOLAC CORP.

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The SUN never sets on SOAP— Well-Pressed by JONES!



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Cartoning Machines - Soap Presses

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CINCINNATI, OHIO**

AS THE EDITOR SEES IT

THE swing of the pendulum toward synthetic detergents may be slowed, or even reversed, over the next two or three years in the opinion of some research people in the field. Improvement in soaps through composition changes, notably wider use of lower-cost sequestering agents, are predicted to reduce greatly their chief drawbacks which place them ordinarily at a disadvantage in competition with synthetic detergents.

Although their spectacular rise of the past five years has focused the spotlight on synthetics, soap still has its champions among technical personnel. As a detergent, used under required conditions, nothing yet has been offered to top it as an all-around cleaning agent. Some of our synthetic friends may rear up on their hind legs and dispute this statement, but by and large it's true. Soap has its faults, but likewise the perfect synthetic detergent has yet to be found.

Marketwise, soap has something of a head start on the synthetics, over 75 per cent of our cleaning products still being based on plain saponified fat. Soap still has a century or two of user acceptance over its competitors. Improved to eliminate most shortcomings, it is bound to remain a formidable competitor and conceivably can win back some part of the market which it has lost since 1945.

That we may not be accused further of having a one-track mind slanted wholly in favor of the synthetics, these facts are set down here. Likewise that we may not also be accused of having already listed soap as a dead duck. Over the years ahead, we see a continuation of the soap-synthetic competitive struggle with a constant improvement in both types of products with soap remaining actively in the picture and very much alive. We see the detergent user the world over as the eventual beneficiary of this struggle, ever better products at lower cost. And for our friends who

tell us that we have consigned soap to the graveyard, our answer is that they are full of pea soup.



ABOLITION of "loss leaders" in the retail grocery trade is one of the aims of the Federal Trade Commission in its current drive to "eliminate and prevent unfair trade practices" for which it recently proposed a total of twenty-two rules. The new rules also would frown on fake bargains, fictitious price reductions, defamation of competitors and a lot of other bad practices. However, the proposed ban on loss leaders is one step with which the majority of manufacturers of standard branded goods are most completely in accord, and represents also the thinking of most marketers of leading products in the field of soaps, detergents, cleansers, polishes, floor waxes, and the like.

As far as we can determine, no manufacturer of well-known products likes to see his brands used as a retail sacrifice to attract trade. In fact, it was out of this to some extent that the idea of fair trade laws originated. Marketers of lesser-known products probably would not care too much as long as the "loss leader" sales would help them move more goods. But, unfortunately for everybody, the loss leader obviously has to be a widely-known and widely-advertised product.

For once, we believe that manufacturers of nationally advertised merchandise see eye-to-eye with FTC. "Loss leaders" have been a thorn in their side for many a moon and still are. But how FTC can eliminate the practice and make it stick legally is a nag of another hue. The demise of fair trade laws as the result of a Supreme Court decision conceivably also could be a factor in this over-all picture. Personally, we don't believe that FTC has a Chinaman's chance of making a

"loss leader" ban effective if the grocers refuse to play ball.



A EUROPEAN soap maker visiting this office recently was amazed at the fact that there is virtually no differential in the prices of soaps and synthetic detergents. In Europe, he said, detergents normally sell for about 25 per cent more than soap products. That price stability of the raw materials for synthetics has been a factor in their favor, as against the recent wild gyrations of the fats and oils market in which huge sums of money have been lost in a matter of a few days, is becoming increasingly clear. In fact, it has been one of the noteworthy developments in the chemical industry generally that the synthetics are taking over larger and larger shares of markets once occupied exclusively by naturally occurring materials. Rayon and nylon for silk, synthetic fibres for wool, and other typical examples come easily to mind. What if tallow ever drops back to three or four cents a pound, as it did once, is the big puzzler; but then, when that happens the synthetic raw materials will be correspondingly lower, too.



THAT synthetic detergent perfuming may not be all that is to be desired was the subject here of recent discussion. Reactions from several persons who should know the answers have been both interesting and enlightening. A number of reasons have been put forward as to why some household detergents may appear properly perfumed one month and exactly the reverse the next. Change in composition which has been almost constant in some products is one of the main reasons given for perfume failure. And variations in the basic raw materials even where the formula remains unchanged has also been pointed out as another possible cause.

Where a perfume has been designed to do an odor-covering job for a definite product, obviously it may or may not work in a product of different composition. If there are variations in product, there should be variations in the perfuming material, or at least tests should be made before the changed detergent is willy-nilly sent to mar-

ket. There might be fewer complaints of objectionable odors. And while on the subject, the comment of one perfumer with a background of twenty-five years in soap and detergents could be helpful. He maintains that numerous detergent odors are wrong in character, mostly because they are "too perfumery."

All of which leads us to conclude that while manufacturers spend all kinds of money on package design, merchandising, advertising and general product improvement, the matter of offensive odor in use does not seem to be regarded too seriously. We disagree and feel that odor has an extremely important bearing on sales.



THE country's rearmament program is necessarily taking so long to reach its maximum scope that many of us, who find it difficult to think and plan ahead for more than a few weeks or months at the most, are failing to give sufficient consideration to the heavy impact which this program will necessarily have on the industrial life of the country over the course of the next few years. It is estimated, for instance, that by 1953 our annual expenditures will have been pushed up to approximately one hundred billion dollars a year or more, double what they were a year or two ago.

The new tax bill, which will do little to increase revenues this year, can be expected to add seven or eight billion dollars to the government's take in 1952; but it will still obviously leave a tremendous deficit for 1952 and the years ahead. There is a widespread feeling that we have gone about as far with the taxes as the country can or will stand, at least in what is ostensibly peace time. If we are to continue spending these tremendous sums, an increasing deficit and a growing national debt are apparently the only answer.

How long can this policy of deficit financing go on? How high can we allow our internal debt to go? Economists disagree of course. Meanwhile there is one school that believe that the Russians are perfectly willing to let us continue at our present pace for ten or even twenty years, without ever bringing affairs to an open contest. Perhaps they feel that we may knock ourselves out in our own gymnasium, setting a pace so rapid we will be unable to stay with it.



Air view of new Colgate-Palmolive-Peet plant in Kansas City.



Finishing operations for Colgate "Dental Cream" packages.

New C-P-P Kansas City Unit

THE official opening of a \$4,-000,000 toilet articles plant took place at the plant of Colgate-Palmolive-Peet Co., Jersey City, N. J., in Kansas City, Kans., Oct. 11. State and city officials, as well as executives of the company, including its president, E. H. Little, were on hand for the dedication and tour of an inspection of the plant which was filled with 11 feet of water during the flood suffered by the area less than three months ago.

Situated on a plot of some 20 building lots at Kansas Avenue and 17th Street, the four story building measures 165 feet in width, 365 feet in length, and totals 193,000 square feet of working area. Construction of the building, the exterior of which is Speed Wall tile, the first such of its

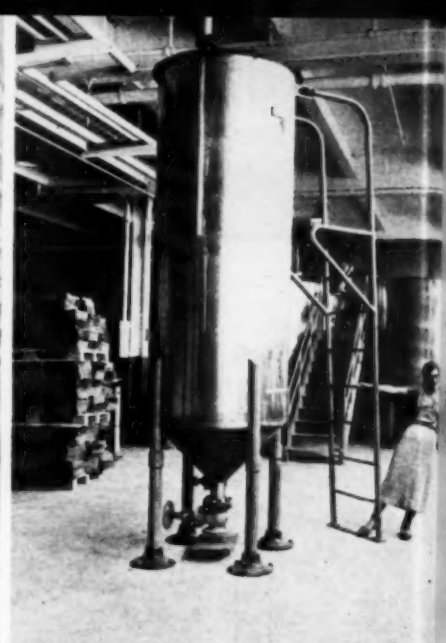
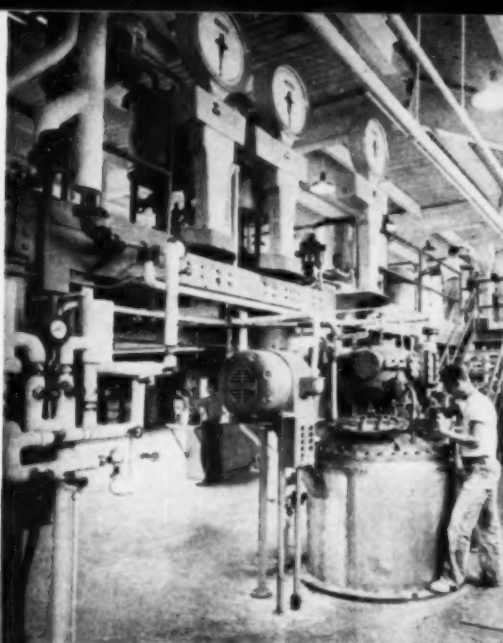
type in the Kansas City area, was begun two years ago. The construction was prompted largely by an increase of 300 percent in the company's output of toilet articles from 1940 to 1950, and the desire to decentralize the manufacturing facilities at Jeffersonville, Ind., and elsewhere and thus provide the area west of the Mississippi to the Continental Divide with faster and better service.

Designed by Albert Kahn Associated Architects & Engineers, Inc., the new plant has incorporated every modern innovation and device necessary to achieve the ultimate in functional planning down to the very smallest item.

The exterior of the building features long sleek lines, rounded corners and no exposed beams or columns.

Focal point of the exterior is the main entrance, highlighted by a 20 x 34 foot picture window, said by the architects to be the first of its type ever to be installed. Other features include an arched dome for its second floor, a vast area entirely devoid of pillars or posts so as to allow great freedom of operation. Forced filtered air is another innovation. Modern treatment of lunch and locker rooms, all stainless steel vats and tubings, fluorescent lighting, and an impressive research, control and testing laboratory make this new plant one of the finest and most up-to-date of its kind.

Cleanliness and ease of maintenance have been stressed in the design of the interior. The show place of the building is the finishing department, which has been located on the



Left to right: Battery of mixing tanks on partial mezzanine above other mixing operations on fourth floor. Brushless shave cream and related items are mixed in tanks shown above. Center view shows

processing tank, right foreground, with scales on mezzanine above, where all ingredients are weighed before adding. Another view of the fourth floor processing department (right) showing tank in which "Veto" deodorant is being made.

second floor in that portion of the building which has been limited to two floors so as to permit the arched dome ceiling over the finishing department. The floor area of the department measures 325 feet in length by 75 feet wide. All supporting pillars have been eliminated from the floor area of the finishing department. The room has a total width of 113 feet, allowing for the columns on the sides just under the edges of the arched ceiling.

Additional advantages which have been included in the finishing department are: complete ventilation through special filters (dry oil) to prevent dust in the area, two-speed ventilating fans to allow more complete air changes per hour during the summer than the regular turn-over for other seasons, fluorescent lighting louvers fixtures which are flush with the ceiling, a 12,000 pound automatic elevator to the warehouse below on the first floor, and electric trucks to bring supplies to the lines as needed.

The tile flooring of the finishing department was tested for a year at the main Colgate-Palmolive-Peet Co. plant in Jersey City, N. J., before it was included in the plan. Metal pan acoustic ceiling with baked enamel surface was selected for the ceiling, and vitreous tile for the walls was used throughout the building.

Each of the 13 lines to be manufactured at the Kansas City toilet

articles plant will be produced in an individual manufacturing unit, which not only allows a specialty treatment to each product but also makes it possible to expand the plant in the future very easily by adding a new product with its completely separate manufacturing unit. The products being manufactured at the Kansas City plant now are: Cashmere Bouquet Talcum; Colgate Dental Cream; Colgate Tooth Powder; Colgate Ammoniated Tooth Powder; Colgate Shave Cream, Brushless and Lather; Palmolive Shave Cream, Brushless and Lather; Halo Shampoo and Veto Deodorant.

To test all incoming raw materials and packing supplies and all outgoing finished products, a laboratory completely modern in every detail, has been constructed on the third floor at the north end of the building. Besides equipment for analyzing and testing purposes, the laboratory will make use of an entirely new feature—a pneumatic tube dispatching system which will carry laboratory samples from various points of the building to the laboratory for testing, thus reaching the laboratory in a matter of seconds rather than being carried by hand over a time-consuming route.

An over-all breakdown of the building would show: warehouse areas on the first floor, with loading wells for eight trucks on the East side and railroad facilities for six

or eight cars on the West side; finishing operations on the second floor; finished product storage tanks, laboratory, etc., on the third floor; and product making operations on the fourth floor, which was constructed with high ceilings to allow for a partial mezzanine.

Besides the light, airy plant offices, the building also houses modern locker and rest rooms on each floor, and a modern lunch room.

Manufacturing crews have been selected and trained to produce each product separately in recent months and will shortly have the plant's 13 lines of items going full blast. The total number of people to be employed when the plant is in full operation will reach 150.

In his remarks at the opening of the plant, E. H. Little, president of Colgate-Palmolive-Peet, recalling the early days of Kansas City, mentioned the three Peet Brothers, William, Robert and Jesse who, in 1872, started a soap factory in Kansas City that was eventually to become part of Colgate-Palmolive-Peet Co. Robert Peet was the grandfather of Roy Peet, now manager of the Association of American Soap & Glycerine Producers, Inc., and was formerly an executive of Colgate-Palmolive-Peet Co.

In conjunction with the official opening of the new plant, the board of directors of the company met for the first time in Kansas City. At

that meeting, Darwin C. Hand was elected a vice-president of the company. He was superintendent of the Kansas City plant at one time.

The new plant was flooded July 13, when the Kaw River overflowed its banks, inundating the Armourdale section of Kansas City, in which the C-P-P factory site is located. At the time, equipment was being installed in the new toilet articles plant. The equipment was moved before the flood waters reached the plant, and 16 days later the new unit was operating. It is the first new industrial building to be opened in the Kansas City area since the flood.

Colgate - Palmolive - Peet Co.,

which is celebrating its 145th year, now has four plants throughout the United States and employs 8,500 persons. In addition to the 900 persons employed at the entire Kansas City plant, the new plant is expected to employ 150 more.

The actual birth of the company goes back to 1806, when William Colgate started the business as a lad of 23 in a small, frame building on Dutch Street in lower Manhattan, New York City. Forty-one years later the business was moved to Jersey City, its present site, where the company occupies 50 buildings on a nine acre site.

In 1917, B. J. Johnson Co., Milwaukee, original maker of Palm-

olive soap, first a floating soap, later a hard, milled soap, changed its name to Palmolive Co. Four years later, the firm, which had been founded in 1864, moved to Chicago.

In 1926, Peet Brothers Co. and Palmolive Co. merged to form Palmolive-Peet Co., and two years later joined forces with the Colgate Company to become Colgate-Palmolive-Peet Co. The company was further enlarged in 1930 by the acquisition of Kirkman & Sons, Inc., Brooklyn, which had been established in 1837 and remained in the Kirkman family until its acquisition by C-P-P, almost a hundred years later.

(Turn to Page 67)

E. H. Little, president of Colgate-Palmolive-Peet Co., addressing group attending official opening of the new \$4,000,000 plant unit at Kansas City. Close-up of modern exterior (bottom, left) shows use of rounded corners and large window (extreme right). Exterior is of a speed wall tiling. Upper right is view of second floor of

plant showing finishing department. Perfect freedom of operation achieved in vast area 75 feet wide and 325 feet long, which is devoid of supporting pillars. Bottom right shows first floor shipping department featuring vitreous tile walls, metal pan acoustic ceilings, tile floors, modern windows and fluorescent lighting.



Shave Preparations

NO one will deny that the introduction of brushless shaving creams caused something of a revolution in the art of shaving. Offering a number of advantages over the lathering products, brushless shaving creams consist essentially of vanishing creams containing lubricating agents and emollients. Brushless shaving cream has been described(9) as stabilized soap foam containing a considerably larger proportion of superfatting agents or lubricants than is ordinarily present in lather shaving cream.

The popularity of brushless creams rests upon a number of factors. That they are more convenient and save time and effort in shaving is readily recognized. In addition to their simplicity and speed of application and the elimination of the shaving brush, the brushless creams are often favored because they are "kind to the skin". Their lubricating action protects the skin and because of their dense consistency they exert a strong effect in supporting the hairs.(38) Moreover, a brushless cream leaves the face with a thin coating of oil or other emollient, thus making the skin softer and less prone to chaf in cold weather. This also helps to make the next shave more comfortable, an important consideration for men with tender skins.(7)

To perform their functions effectively, brushless creams should meet certain basic requirements. Consistency is an important consideration and a cream should retain its body throughout its shelf life and through changes in temperature. It should be soft enough to spread on the face quickly and smoothly in a thin film. However, it should not be so soft as to drip from the skin or the razor. The cream should soften the beard and lubricate both the skin and razor so as to provide a close, smooth, gliding shave. Rinsibility is an important consideration. The

cream should mix well with water, even cold water, to permit its ready removal from the skin and the razor. It should be perfumed carefully, avoiding heavy, persistent compounds.

With regard to odor, the federal specification states that it should be pleasant and be as specified by the purchaser. With regard to other standards, the specification requires that the moisture content of the cream shall not exceed 70 per cent and that there shall be no free alkali. A minimum of 15 per cent free fatty acids, calculated as stearic acid, should be present.

Raw Materials

THE selection of raw materials for brushless shaving creams must be made with care. As already indicated, these products consist essentially of a vanishing cream base to which is added various lubricating and emollient materials. Hygroscopic agents or humectants are included to prevent drying in the container and on the face. Surface active agents are sometimes present to improve rinsibility and to impart other desirable qualities.

The vanishing cream base of the brushless shaving preparations may contain from 15 to 20 per cent of stearic acid of which only 20 to 30 per cent is neutralized.(9) Only partial saponification is required; the small proportion of stearin soap serves satisfactorily to emulsify the non-saponified stearic acid which gives body to the cream. As noted in a recent commentary on these products,(39) potassium hydroxide is the alkali most commonly used for saponifying purposes because it yields soft creams with good sheen. It is used frequently in conjunction with caustic soda to lend plasticity to the products. Triethanolamine has also found wide use as a saponifying agent because it yields lustrous creams of soft consistency.

Mineral oil, petrolatum and

vegetable oils impart lubricating qualities to the cream. Lanolin and cholesterol increase this effect and also act as auxiliary emulsifiers and emollients. Cetyl alcohol, stearyl alcohol and spermaceti may also be used for such purposes.

It has often been emphasized(40) that glycerine or some other hygroscopic agent must be included in the formula to prevent drying of the cream in the jar. In addition to maintaining plasticity, these agents prevent the cream from drying during shaving. The selection of the most suitable agent requires a certain amount of consideration because it has been shown(41) that the hygroscopic polyols replace each other only to a limited extent.

Mucilages made with tragacanth, sodium alginate or cellulose derivatives are added to creams to help retain moisture and stabilize the emulsions. As noted by Hilfer,(11) glyceryl monostearate and similar esters are also used to enhance the stability of the preparations, serving particularly to maintain consistency over a wide temperature range. He also points out that better rinsibility is obtained when synthetic detergents and wetting agents are incorporated. Sodium lauryl sulfate and the alkanolamine condensates have been used for this purpose. In addition to improving washability, such materials improve the wetting and hair-softening properties of the cream.(27,39)

It is obvious that many variations are possible in the formulation of brushless shaving creams. Aside from the selection of suitable raw materials, careful manufacturing technique is essential to obtain efficient creams of good appearance and consistency. Due attention must be given, for example, to such factors as the temperature of emulsification and the speed of mixing.

By Milton A. Lesser

Part II—Brushless Products

Many formulas for brushless shaving creams are provided in the technical, patent and manufacturers' literature. Thomssen and McCutcheon, (7) for example, offer the following as an example of the older type of preparation:

Stearic acid, triple pressed	13 lb.
Coconut oil, Cochin.....	2 lb., 13 oz.
Caustic potash lye, 38° Be.	3 lb., 6 oz.
Glycerine	12 lb., 8 oz.
Boric acid, crystals.....	2 lb.
Water, soft or distilled..	60 lb.
Perfume	3 oz.

Dissolve the boric acid in about a gallon of water, heated to near the boiling point, and then add the glycerine. Mix the rest of the water and the caustic potash lye and heat to 140 to 150°F. Add the hot, previously prepared glycerine-boric acid solution, maintaining the temperature at about 150°F. The previously melted mixture of stearic acid and coconut oil is added to the aqueous solution, with stirring. Continue stirring, for several hours, until the mass is smooth and old. Add the perfume and distribute it thoroughly by stirring. When of the proper consistency, fill into tubes or jars.

The use of triethanolamine is illustrated in a formula for a brushless cream offered by a leading producer (42) of this material. It calls for the use of:

	parts
Stearic acid, triple pressed..	35.0
Mineral oil, white	7.5
Lanolin, anhydrous	6.5
Terpineol	0.1
Triethanolamine	2.2
Borax	2.2
Propylene glycol	4.0
Water	145.0

Melt the stearic acid with the lanolin and mineral oil, bring to 70°C. and add the terpineol. Separately heat the water containing the triethanolamine and borax to the same temperature, and add the fatty mixture with vigorous stirring. Continue stirring

until a smooth emulsion is obtained. When cooled to about 50°C. add the propylene glycol to which the perfume has been added. Allow to cool with occasional stirring. Let the cooled cream stand overnight and stir again for about a minute before packaging.

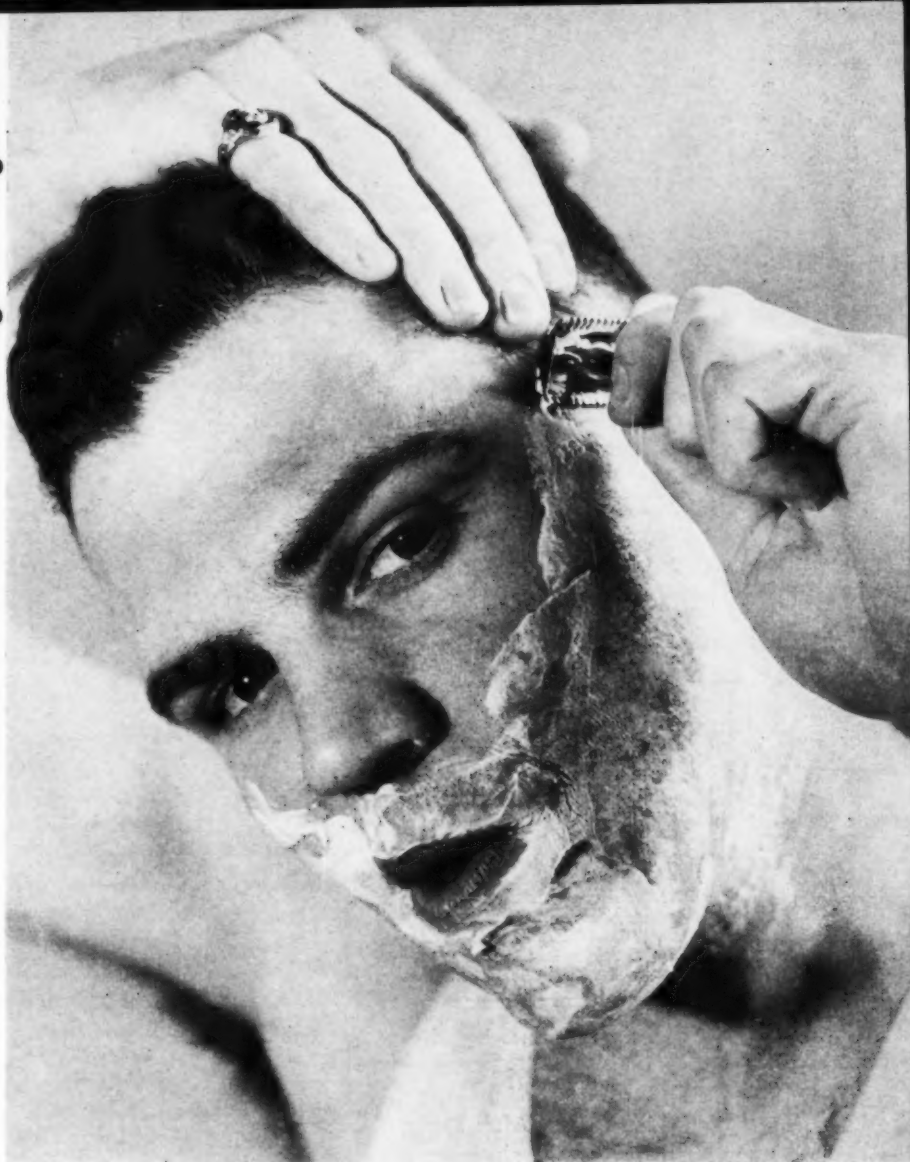
Glyceryl monostearate, useful in the production of smooth bodied, stable preparations, may replace stearic acid completely in the compounding of brushless shaving creams if enough soap is used in the formula.(9) The self-emulsifying forms of this glycerine ester already contain soap and are, therefore, suitable for direct use in a formulation such as the following: (43)

	per cent
Glyceryl monostearate, self-emulsifying	12.0

Spermaceti	4.5
Mineral oil	2.5
Glycerine	7.0
Water	73.5
Preservative	0.1
Perfume	0.4

The glyceryl monostearate is melted with the spermaceti and mineral oil at 75°C., while the glycerine, water and preservative are heated together to the same temperature. The two solutions are mixed and stirred until a homogeneous product is obtained. The perfume is added at about 50°C. while the cream is still soft.

A non-greasy cream of this sort should be especially suitable for men with oily skins. For a man with a sensitive, dry skin, however, the Davidsohns(44) suggest the use of a shaving cream such as the following, with its





high proportion of lubricant and emollient materials:

	parts
Paraffin, white	10
Petrolatum, white	20
Stearine	10
Triethanolamine	1
Glycerine	20
Water	40

Mix the first three ingredients and heat on a water bath to 70°C. and add the triethanolamine heated to the same temperature. After stirring, add a mixture of the glycerine and water heated to 70°C. Agitate the entire mass until, on cooling, it assumes a creamy consistency.

Of course, many new materials are finding their way into the formulation of brushless shaving creams. A case in point is offered by McCutcheon (45) in the following formula which makes use of a modern polyethylene glycol ester:

	per cent
Stearic acid, triple pressed	10.0
Mineral oil, 65/75	2.0
Butyl stearate	5.0
Polyethylene glycol 600 monostearate*	10.0
Spermaceti	5.0
Preservative	0.1
Water	67.9

*Kessler Chem. Co., Philadelphia, Pa.

Blend all the ingredients and heat to boiling. Stir thoroughly to below 35°C. and then add a suitable quantity of perfume.

As noted by Reilly, (3) a brush-

less shaving stick appeared on the market several years ago. Suggestions for making products of this sort are offered in the patent granted to Thomas. (46) Thus a composition, which can be molded in stick form for direct application to the moistened face to leave an opaque beard softening layer, can be made from:

	parts
Sesame oil	38.75
Spermaceti	45.00
Stearine	7.50
Tallow soap	1.50
Partial polyglycerine fatty acid esters	4.00
Titanium oxide	2.00
Perfume	1.25

Equally interesting is the fact that formulas for making brushless shaving liquids are also available. (47) A stable, well-bodied liquid preparation of this sort can be made from: (48)

	parts
Stearic acid	5.8
Lanolin	1.3
Mineral oil, light	2.9
Vegum*	1.0
Water	85.8
Triethanolamine	0.3
Glycerine	2.1
Titanium dioxide	0.8
Preservative	sufficient

R. T. Vanderbilt Co., New York.

Mix the stearic acid, lanolin, mineral oil and preservative and heat to 70 to 75°C. Slowly add the "Vegum" to the water, continually agi-

tating until smooth. Add the rest of the ingredients to this liquid gel and heat to 70 to 75°C. Add the fatty mixture to the aqueous combination and mix until cool.

Also noteworthy are the observations made by Janowitz (12) concerning a so-called two-way shaving cream. If the user has time, he may make a lather with it by using water. Conversely, if he is in a hurry, he may use it as an ordinary brushless cream. The following formula, says he, could serve as a quite useful cream of this type:

	parts
Stearic acid	18
Lanolin	3
Mineral oil	3
Glycerine	5
Triethanolamine	2
Borax	2
Water, to make	100

It is pointed out that if the stearic acid content is increased, it becomes a more definite brushless cream type. If, however, the soap content is raised, a rather highly saponified shaving cream is obtained.

Pressure Products

OF COURSE, no discussion of modern shaving preparations could be complete without consideration of the pressure propelled products. Offering more than mere gadget appeal, these aerosol products provide ready-made foam or lather that makes for convenience and speed in shaving. The success of one such shaving preparation has spurred others to more intensified research.

That such products could be made became self-evident after the development of the low pressure whipped cream package. (49) Although the basic principles had been established in the work with whipped cream, there were, as noted by Graham, (50) many problems requiring solution before a pressure propelled shaving cream could become a reality.

For example, the presence of water in formulations brought up the problem of corrosion. This was met in various ways, such as by the use of corrosion inhibitors, by adjusting and buffering to the proper pH, and by careful selection of container metals.

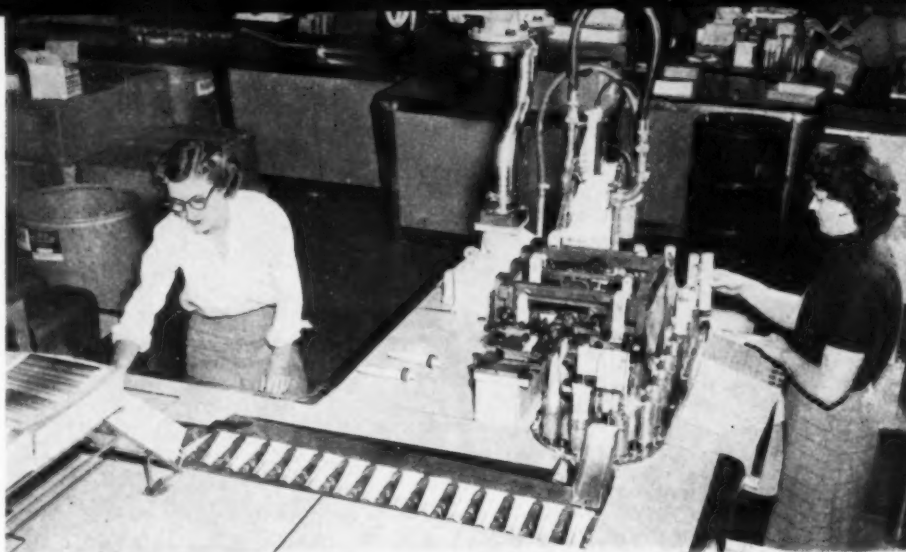
However, as reminded by Beacher, (51) corrosion problems have currently assumed additional importance because of the reduction or omission of tin plate as a dispenser component, in accordance with N.P.A. restrictions imposed on container manufacturers. This problem, as well as others associated with corrosion, may be met as a result of extensive work now going on to develop suitable glass or other types of containers for aerosol products.

The need for valves for dispensing aerated or foam-type products has also been met. (52) Although the operating principle of the shaving cream package is identical with that of the whipped cream container, modifications in the materials comprising the valve mechanisms were necessary to solve corrosion and other special problems created by the lather ingredients. (53) Work is constantly going on to improve the effectiveness of the valves.

Commercial filling of aerosol shaving creams is accomplished by inclosing 90 per cent by weight of the active ingredients in the container, after which the valve is clinched on. Ten per cent of the propellant gas is then added by means of special equipment through the valve orifice. (51,54)

While whipped creams use nitrous oxide and carbon dioxide mixtures as the propellents, aerosol shaving cream manufacturers use liquefied gases. The "Freons" (E. I. du Pont de Nemours & Co., Wilmington) and the "Genetrons" (General Chemical Division, Allied Chemical and Dye Corp., New York.) are examples of such propellents. Combinations of "Freon-12" and "Freon-114" provide more stable propellents for foam products than does "Freon-12" alone. (55) Mixtures of these two propellents are commonly used in shaving creams, in the proportion of 10 per cent of the final product.

The remainder of the product consists of the shaving cream which is to be dispensed and aerated by the propellant. Examination of various formulations shows that the composition and manufacture of products intended for pressure propulsion do not differ materially from other types of



Brushless shaving cream rolling off one of the 13 completely modern assembly lines in Colgate-Palmolive-Peet's new multi-million dollar toilet articles plant in Kansas City, Kansas.

shaving creams. However, it will also be evident that higher proportions of synthetic detergents and wetting agents are used. Indicative are the following percentage compositions; (54) formula A giving a somewhat drier lather than formula B:

	A	B
Cetyl alcohol	2.4	1.0
Lanolin, hydrous	1.5	2.0
Mineral oil, heavy	4.8	5.0
Avitex C*	16.2	30.0
Avitex SF*	27.0	15.0
Triton X-100**	3.0	3.0
Stearic acid	1.0	.....
Glycerine .....	.....	5.0
Perfume	0.2	0.2
Water	43.9	38.8

* E. I. du Pont de Nemours & Co., Wilmington, Del.
** Rohm & Haas Co., Philadelphia, Pa.

Also indicative is the following shave cream formula, one of several suggested by Beacher (51) for making pressure propelled products:

	per cent
Aerosol S*	2.0
Stearic acid	9.0
Coconut oil	9.0
Potassium hydroxide	2.5
Glycerine	8.0
Acronon 30*	3.0
Water	66.5

* Alrose Chemical Co., Providence, R. I.

It is noted that from 0.2 to 0.5 per cent of perfume should be included in such formulations. Actually, the perfuming of pressure propelled products, including aerosol shaving creams, is an important consideration and one encompassed by a number of difficulties. (56) Noteworthy is Pentaioni's (57) work, part of which was concerned with the perfuming of pressure propelled shaving creams. Several

perfume houses make perfumes especially suited to incorporation in aerosol products. At least one such organization showed its confidence in the future of these items by setting up a special laboratory to develop and test perfumes for aerosol preparations.

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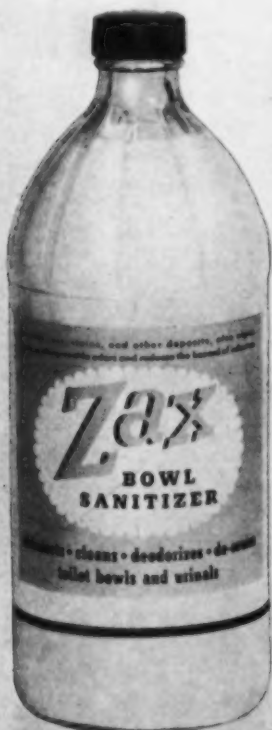
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Latest addition to the Yardley of London (New York) line of men's toiletries is new Yardley brushless shave cream. Priced at 75 cents, it is packaged in a green metal tube, accented with white and gold lettering. A feature of the new shave cream is that it does not have to be rubbed into the skin for quick results.

"Zax" is a new bowl sanitizer announced recently by Hysan Products Co., Chicago. Packed in quart bottles, the new sanitizer is said to clean, disinfect and deodorize in one operation. It also will remove noxious scale and rust, according to the maker.



Cosmetic Christmas stocking of Jacqueline Cochran, New York, encased in red net, with silvery top and toe, bath and hand size cakes of "Pursuit" soap and ensembled toilet water, and one and one-half drams of perfume in spill-proof flacon. Retails for \$4.25.





New Sudbury "Kil-Grease" concentrated liquid detergent which is recommended as an all-purpose product for uses ranging from dishes and cooking utensils, to clothes, floors, stoves and automobile washing.



"Aeromist" window and glass cleaner is now packaged in a squeezable plastic bottle, according to a recent announcement of Boyle-Midway, Inc., New York. Product is suggested for household use and for automobile windows, too.

New "Pursuit" soap (hand size) is featured in attractive gift box by Jacqueline Cochran. Three cakes in glazed, striped paper gift box.



New lithographed "Toni" floor stand for toiletries section of super markets features the "self-service" idea. The new display of Toni Co., Chicago, stocks substantial quantities of Toni shampoo and cream rinse, as well as Toni home permanent refills. Created and lithographed in color by Elinson-Freeman, Long Island City, N. Y.





Among representatives of soap companies at the Chicago meeting of the A.O.C.S. were (l. to r.): E. M. James, Lever Bros. Co., New York; M. L. Sheely, Armour 31st St. Auxiliaries, Chicago; W. A. Peterson, Colgate-Palmolive-Peet Co., Jersey City, N. J.; E. R. Luckow, Allen B. Wrisley Co., Chicago; J. T. R. Andrews, Procter & Gamble Co., Cincinnati, O.; R. C. Stillman, Procter & Gamble Co., Cincinnati, O.

Oil Chemists 25th Meeting

THE 25th fall meeting of the American Oil Chemists' Society, Oct. 8 to 10, drew some 600 of the nation's top oil chemists to Edgewater Beach Hotel, Chicago, for a review of new developments in chemical, engineering and processing phases of fats and oils production for use in soaps, synthetic detergents and other chemical specialties, including paints, cosmetics and food.

A total of 54 papers were read at the different sectional sessions, of which eleven dealt with topics of direct interest to soap makers. Outstanding among these was a report by a government authority on the current supply situation in the fats and oils industry. Another paper dealt with Wyandotte Chemicals Corporation's new series of non-ionic detergents that can be tailored to fit particular cleaning jobs. A third report described the ion exchange process for purifying glycerine, as used in the new plant of Lever Brothers Co. at Los Angeles, Calif.

At the opening session, Oct. 8, the fats and oils supply situation in the U. S. for the coming year was described

by George L. Prichard as "one of plenty, but not one of any surplus that should cause undue concern." Mr. Prichard, connected with the Fats and Oils Branch, Production and Marketing Administration, U.S.D.A., forecast an overall domestic production of oils of about 12.6 billion pounds, for the 1951-52 crop year. Of this, he said, 9.1 billions will be edible oils and 3.5 billions inedible.

Cottonseed oil output, Mr. Prichard said, should run to about two billion pounds, approximately 57 percent over the small 1950 crop. Soybean oil should total 2.5 billion pounds, about eight percent below the bumper 1950 crop. Lard yield will total 2.9 billion pounds and tallow and grease about 2.5 billions. The remaining 2.7 billion pounds come from such sources as corn, wheat, peanut, tung, sunflower, flaxseed, olive, sesame, fish and others.

Per capita consumption of fats and oils, Mr. Prichard said, should run higher than the 44 pounds of 1950-51. Government price supports of the various oilseed crops, he added, will tend

to prevent any drastic declines in prices.

"I believe everyone will agree," he continued, "that it would be desirable to increase annual carryover stocks of fats and oils and oilseeds above the levels of the past few years, as insurance against the possibility of lower production in future years. There is, obviously, a need for our exportable surplus at reasonable prices by friendly nations.

"At present there are no indicated foreign areas of extreme scarcity, nor are there areas of major crop failures, as in Yugoslavia generally and in the Mediterranean Basin, which would require substantial exports from the United States. Nevertheless, Western Europe is and will continue to be a major deficit area. Supplies from areas other than the United States are still far from adequate to meet European needs."

Because of inflation and the world political situation, there is pressure for higher prices, Mr. Prichard pointed out. The tremendous American production, he felt, is a stabiliz-

ing factor. Before World War II the U. S. was a net importer of about 1.5 billion pounds a year, he said, but is now a net exporter, shipping out over two billion pounds and importing 1.3 billion pounds. "The principal factor in this change," he said, "has been the phenomenal growth of soybean production on U. S. farms and the parallel growth in domestic handling, crushing and processing facilities."

Other factors, he said, have been expansion of U. S. flaxseed production; the increase in animal fat production; and the increase in processing plants using solvent extraction with its higher yields. The only scarcities are in castor and tung oils. But domestic production of castor oil is being increased and will reach about 200,000 acres in 1952. Tung oil is short because of the Chinese embargo, but domestic production is rising rapidly and there is enough, with Argentine imports, to meet defense needs.

New Non-Ionics Described

WYANDOTTE Chemicals Corp.'s new series of non-ionic surfactants for detergent formulation were described in a paper by Thomas L. Vaughn, Donald R. Jackson and Lester G. Lunsted. Synthesis and structure of these new hydrophobic units and their use in non-ionic surfactants were outlined. It was pointed out how the wide variations in molecular weight increase the possibility of tailoring the compounds for special uses ranging from mobile liquids to solids sufficiently hard to be flaked. Data were presented to show the effect upon carbon soil removal, wetting action and whiteness retention properties.

Detergents made from the new chemicals, the chemists said, show twice as much cleansing activity as the ordinary anionic detergents in standard washing tests, and were found far superior to soap. In whiteness retention they found that the new materials proved twice as efficient as good laundry soap and up to three times better than an anionic detergent. In reducing surface tension and in wetting properties the new compounds also rank high.

Their principal value, however, the authors reported, lies in the fact that the size of the molecules of the new materials, whose brand name is "Plurionics," can be varied to fit them to any cleaning problem. They can also be made cheaply, the paper stated.

Glycerine Processing

THE new Lever Brothers Co. plant at Los Angeles is the first commercial installation for the purification of soap-lye crude glycerine by ion-exchange, according to G. W. Busby and D. E. Grosvenor of the Lever research staff. The process substitutes ion-exchange for the precipitation and distillation process used formerly and this new method, the chemists stated, yields glycerine of high quality, which need not be filtered or bleached at lower capital investment and operating costs.

Facilities of the new west coast Lever plant were described and the operations outlined. Designed by Illinois Water Treatment Co., Rockford, Ill., it is rated as capable of producing 26,600 pounds of crude glycerine daily.

Abstracts of other papers presented at sessions of the Society's

soaps and detergents section, as furnished by the authors, follow:

Commercial Application of Ion-Exchange to Glycerine Purification—By A. C. Reents and D. M. Stromquist, Illinois Water Treatment Co., Rockford, and Orlando Graziani, Archer-Daniels-Midland Co., Minneapolis. Reference and coverage of previous work on glycerine purification by ion-exchange is briefly presented. The basic ion-exchange process as applied to glycerol purification and methods of treatment and upgrading of a dynamite grade glycerine to a C. P. glycerol are included. Results of a new development are discussed and operation of a commercial ion-exchange system designed for purification of a glycerol sweetwater over a year's operation are described.

Synthetic Detergents from Animal Fats, Disodium α -Sulfopalmitate and Sodium Oleyl Sulfate, by A. J. Stirton, J. K. Weil, Anna A. Stawitzke and S. James, Eastern Regional Research Lab., Philadelphia. Disodium α -sulfopalmitate was prepared as a white crystalline powder from palmitic acid, by sulfonation with liquid sulfur trioxide in tetrachloroethylene. Sodium α -sulfopalmitic acid, prepared by partial neutralization after sulfonation, or by heating the disodium salt with excess dilute sulfuric acid, was converted to the butyl ester, amyl ester and triethanolammonium salt. Homologous compounds were made from lauric, myristic and stearic acids.

Sodium oleyl sulfate was prepared in an estimated purity of 95 percent or greater, without appreciable reaction at the double bond, by sulfation of oleyl alcohol with pyridine-sulfur trioxide. Storage at room temperature for one year showed no decrease in iodine number or development of peroxides. The solubility, surface tension, foam height, wetting and detergent properties of these and related compounds were measured.

Disodium α -sulfopalmitate is potentially inexpensive, has adequate surface active properties, is a good detergent in hard and soft water, but has limited solubility at room temperature (0.25 percent at 25° C.). Sodium

Attendance of 600 at 25th fall meeting of American Oil Chemists' Society hears 1952 fats and oils outlook described as plentiful. New non-ionic detergents that can be tailored to fit particular cleaning jobs, and ion exchange process for purifying glycerine are among subjects of 54 papers read.



Free-Flowing

POWDERED LANOLIN SOAP

Powdered anhydrous free-flowing lanolin soap is new. LANOMAL* (1 & 2) means easier, less costly "lanolizing" of powdered and cake soap.

LANOMAL is added by direct mixing, simplifying production blending.

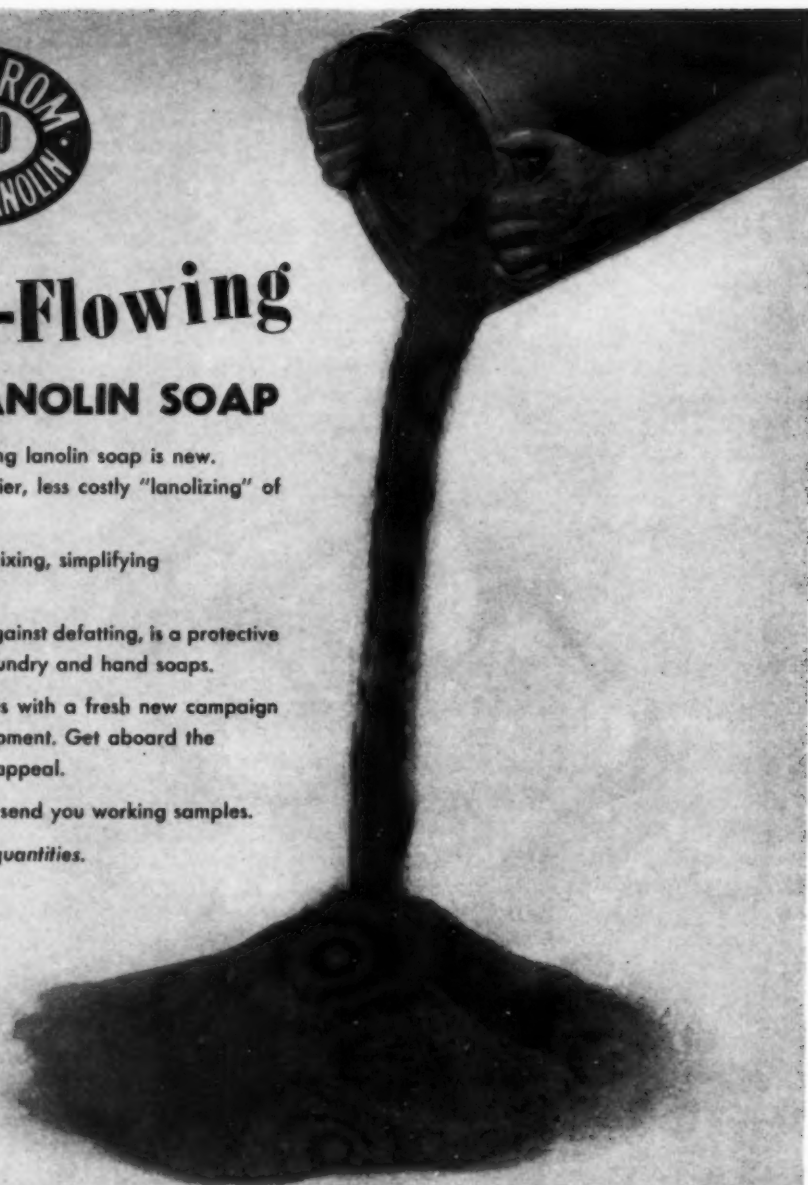
LANOMAL (1 & 2) safeguards against defatting, is a protective for those allergic to ordinary laundry and hand soaps.

Now is the time for adding sales with a fresh new campaign based on the LANOMAL development. Get aboard the driving force of proven lanolin appeal.

Call or write—we'll be happy to send you working samples.

Prompt delivery in commercial quantities.

*NIMCO POWDERED LANOLIN SOAP



Unretouched photograph of free-flowing powdered LANOMAL

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TYPICAL ANALYSIS (WHEN PACKED)

LANOMAL SOAP #1 (POWDERED)

Lanomal Soap #1 is a prepared free flowing powdered product manufactured by blending 25% of Bentonite with 75% of "Lanolin Soap", with the following typical analysis:

Moisture	2.5%
Unsap. (Lanolin Alcohols)	34.0%
Sodium Soap	63.5%
Combined Sodium Oxide	7.8%
Saponified Lanolin	
Fatty Acids	55.7%
Free Alkali	None
Ph. of 5% aqueous solution	9.5-10.0

LANOMAL SOAP #2 (POWDERED)

Moisture	1%
Unsaponifiables (Lanolin Alcohols)	5%
Sodium Soap	94%
Combined Sodium Oxide	11%
Saponified Lanolin	
Fatty Acids	83%
Free Alkali	None
Ph. of 5% aqueous solution	9.5-10.0

Packing: 300# bbls. or fibre containers.

oleyl sulfate has excellent solubility and surface active properties and is an excellent detergent in soft water. In hard water it is not so efficient, although it forms no insoluble calcium salts. The future of these compounds will depend upon successful formulation with builders or combinations with soap or other detergents.

Measurements Relating to Consistency of Foam—By G. V. Scott and W. Thompson, Colgate-Palmolive-Peet Co., Jersey City, N. J. Qualitative observations of foams prepared in various ways from detergent solutions indicated a wide variation in consistency. A procedure involving adaptation of a rotating viscometer has been developed for making relative measurements, which are a function of this property.

Foams prepared from soap and synthetic detergents are compared by this procedure. The dependence of consistency on the drainage of these foams is shown as well as the effects of the presence of salts and hardness.

The use of purified materials has demonstrated that the synthetic detergents examined *per se* do not produce foams of high consistency. Addition of small amounts of some polar long chain compounds resulted in many cases in foams which were of high consistency. The effect of a variety of materials was reported, using several synthetic detergents. Results were considered in relation to previously reported results on foam and single film drainage rates.

Effect of Mole Ratio Distribution of the Physical Properties of Ethoxylated Alkylphenols—By R. L. Mayhew, General Aniline and Film Corp., Easton, Pa. The effect of ethylene oxide content (with relation to the hydrophobic residue) on the physical properties of a nonionic surfactant is well known. This ability to change the hydrophobe-hydrophilic balance is an important characteristic of nonionic surfactants. As is also well known, nonionic surfactants are not represented in a single molecular species, but, as shown by Flory, the polymerization of ethylene oxide is accomplished in a random fashion, resulting in a number of molecules of varying size as represented by the Poisson's distribution

formula, and can be represented schematically by a typical distribution curve. The number of molecular species, as well as the relative amounts of these species present for a given ethylene oxide content, can be varied over a wide range. Using an alkylphenol as the hydrophobe base and employing molecular distillation to obtain extremely narrow ranges of molecular species, a critical study has been made of the effect of this mole ratio distribution on such properties as surface tension, interfacial tension, foaming, wetting, emulsification, detergency, etc.

Detergency Evaluation. III. Adjustment of Terg-O-Tometer and Launderometer Wash Test Method to Produce Comparable Soil Removal Data, by J. C. Harris, Monsanto Chemical Co., Dayton, O. Previous papers of the series have been concerned with the evaluation of wash test methods, using one standard soiled test fabric, and then evaluating four different soiled test fabrics by three standardized wash test methods. The paper presents results obtained in an attempt to adjust the Terg-O-Tometer wash test method to provide soil removal data and detergent comparison results equivalent to the Launderometer wash method, which involves four 10-minute washes.

The data developed indicate that a satisfactory technique could be developed, using the Terg-O-Tometer, which would provide soil removal values and ratings of detergents closely paralleling results obtained by the Launderometer wash method. The mechanical action of the Terg-O-Tometer is so much more energetic than that of the Launderometer that a single three-minute wash and a two-minute rinse produced soil removal values equivalent to those for the Launderometer in the four 10-minute wash methods. The relative detergency ratings of various products obtained by the two methods were closely comparable.

Detergency Measurement Using Artificially-Soiled Cloths, by F. L. Diehl and J. B. Crowe, Procter & Gamble Co., Cincinnati, O. Four types of artificially soiled cloths are com-

pared in their ability to evaluate cleaning of representative detergent products. Three of these cloths are commercially available, while the fourth is from a private laboratory. These are compared in their ability to rate detergents in the same order as naturally-soiled clothes rate detergents. Sensitivity and reproducibility of the various soiled cloths in measurement of soil removal and whiteness retention are studied.

Results show that artificially-soiled cloths must be used advisedly. There is no substitute for actual performance tests of detergent products under practical conditions. At best, artificially-soiled cloths are useful for "screening" purposes, where positive test results are confirmed by practical tests.

The Deposition of Lime Soap on Fabrics During Washing, by Anthony M. Schwartz, D. C. Knowles, Jr., and Julian Berch, Harris Research Labs., Washington, D. C. A method was presented for determining the lime soap content of a fabric sample by direct titration. Perchloric acid in a non-aqueous solvent mixture is used as the reagent. Cotton swatches were submitted to a series of washing and rinsing cycles in hard water, using soap and mixtures of soap with various synthetic detergents. The swatches were then analyzed for their lime soap content.

There appears to be relatively little correlation between lime soap deposition and the results of the standard lime soap dispersion tests which measure the peptizing power of various protective agents. The results indicate that in the absence of a mechanical filtration effect the colloidal state of the lime soap (peptized or flocculated) is not the major factor in deposition. A distinction is made between the power of a protective agent to peptize lime soap and its power to prevent the sorption of lime soap by the fabric. It is particularly difficult to prevent the tenacious sorption of lime soap formed *in situ* from sodium soap during the rinsing step. The ability of the protective agent to minimize this sorption appears to be a determining factor in

(Turn to Page 49)



Follow through

"To get distance," an old pro once told us,
"you've got to follow through."

We think that makes good sense in business, too. So we're not content just serving our customers' day-to-day needs. Our Market Research Department, for instance, looks ahead . . . studies their growing needs . . . and we expand to meet them.

That's why we can take care of our customers of record with soda ash in times of long or short supply.

We'd like to plan on establishing you as a customer of record. Why not follow through with an inquiry *now* — and find out the long-range advantages of dealing with a reliable source of supply?

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DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS



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its effectiveness.

Final paper at the Soap section's sessions, for which no abstract was available, was on "Organic Complexing Agents in Solutions of Soap and Surface Active Agents," by H. W. Zussman and Robert Bernstein, Alrose Chemical Co., Providence, R. I.

Charles E. Morris, chairman of the Chicago committee in general charge of the conference, opened the Monday morning session with a plea for clarification of the term "oil chemist." Its use, he asserted should be limited to "real oil chemists," and should not be applied to "petroleum chemists." While petroleum is "very interesting and useful," it is not oil, he declared, the word oil probably having been applied to it for want of a better name, or because it is greasy.

Petroleum chemists, he continued, work with an inedible mineral product which is chemically a mixture of hydrocarbons. Oil chemists, on the other hand, deal with fats and oils of animal and vegetable origin. Chemically, they are glycerides or glyceryl esters of organic acids, derived from plants and animals direct and unaltered. The confusion in terms, Mr. Morris said had led to a lack of understanding of the oil chemists' contributions to human progress. The public, however, he conceded, will probably continue to call petroleum "oil."

This 25th fall meeting of the Oil Chemists Society brought forth recollections of the organization, back in 1909, as the Society of Cotton Products Analysts. In 1920 the present name was adopted and its first major scientific meeting was held in New York in 1927. This development, from a committee of cottonseed crushers' chemists to its present scientific status, it was pointed out, reflects the steadily growing importance of oil chemistry in the last quarter century.

Following adjournment of the meeting on Oct. 10, two field trips were arranged for the next day, one to the Food and Container Institute of the Army Quartermaster Corps, in Chicago, and the other to the S. C. Johnson & Son, Inc. plant at Racine, Wis.

Entertainment features during

the gathering included a stag supper and smoker Monday, Oct. 8 and a dinner and dance, Oct. 9, both at the Edgewater Beach Hotel. For the women a program was arranged which included sight-seeing trips around town, shopping tours, visits to a television theatre, luncheons, etc.

The 1952 fall meeting, it was announced, will be held next Oct. 20 to 22, at the Netherlands Plaza Hotel, Cincinnati, O. Chairman of the arrangements committee for that occasion is N. A. Ruston, director of development and service for Emery Industries, Inc., Cincinnati.

Liquid Soap: Consumer View

By H. G. Harding*

National Dairy Research Laboratories, Inc.

L IQUID soaps in dairy plants are used primarily for wash-rooms to remove dirt and bacteria quickly from the skin without irritation. The exact composition of the liquid soap solution which is required may vary with conditions at the specific consumer's plant. Some of these conditions are water hardness, type of dirt to be removed, and condition of the user's skin.

Six important characteristics of an ideal liquid soap are that it be

1. Effective in removing soil from the skin
2. Effective in reducing the bacterial population of the skin
3. Harmless to the user
4. Harmless to dispensers and wash-room fixtures
5. Pleasing in appearance and odor
6. Economical to use

Undoubtedly some compromise is necessary in compounding a soap solution since certain characteristics tend to be mutually exclusive.

Although the ideal soap solution should be capable of removing all types of soil, in practice the soil on the hands of office workers and food plant employees is not hard to remove. Additives to prevent the formation of insoluble hard water soaps help to preserve the soap for soil dispersion and suspension which is the primary purpose of washing the hands with soap.

The secondary purpose of washing is to reduce the bacterial

population on the skin and so reduce, as far as possible, the spread of disease from hand contamination. Soap, alone, is quite effective in mechanically removing bacteria, but its action does not appear to be complete. Certain compatible germicidal agents, when added to soap, appear to reduce further the bacterial count of the skin; but complete sterility is not achieved. Such additives appear to be desirable, but there is a question as to how much one is justified in paying for the germicidal agent.

Probably no soap will be harmless to all users since there may be a few people who have very sensitive skins and are therefore allergic to any soap. Attention should be given to pH control and the avoidance of harshness. Additives which step up the cleaning action may make the soap remove too much of the natural oil from the skin and so cause trouble. Here it is definitely necessary to compromise on cleaning power.

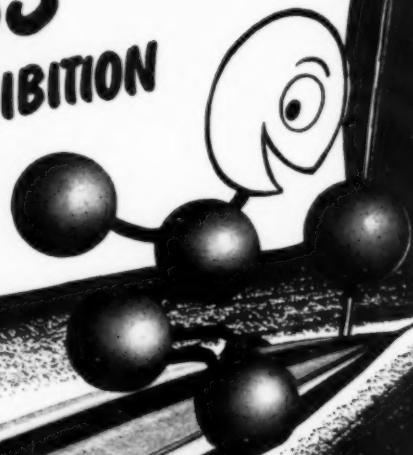
Soaps which corrode or clog dispensers or which form deposits of insoluble soaps on wash basins are undesirable. Liquid soaps which are satisfactory for use in the ultrasoft New York water may be unsatisfactory in waters of 30 to 50 grains per gallon hardness or in waters high in dissolved iron. For these waters, it is desirable to provide hardness sequestering and/or dispersing agents in the liquid soap.

Cloudy soap solutions which coat the inside of the dispenser are not attractive, while clear solutions appeal to the eye. Disagreeable fatty

(Turn to Page 143)

* Presented at symposium of liquid soaps at 24th annual convention, Association of American Soap and Glycerine Producers, Hotel Plaza, New York.

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All of these famous "firsts" have resulted in greatly improved quality standards for the industry . . . by Emery, the World's Leading Producer of Fatty Acids.

ONE OF the nation's largest chemical companies, Pennsylvania Salt Manufacturing Co. of Philadelphia, started its business on the demand by housewives for lye. Today, the company, which still makes lye, is celebrating its 100th anniversary with some of the most diversified products ever made by one firm. Most recent addition to its many services was the establishment of a Maintenance Chemicals Department.

One hundred years ago, five young Pennsylvania Quakers thought they had found the way to success in a new venture—an American chemical company to supply the needs of the rapidly expanding economy and industry of the Midwest.

They had a patent for a process of making alkalis from salt, \$100,000 in capital raised among themselves and 12 friends, a plant site over salt deposits near Pittsburgh—gateway to the West—and almost boundless courage and hope.

Within five years the process had proved a failure and virtually their entire investment appeared lost. But somehow they summoned the courage to put up more of their own money and give it one more try.

Today, their company is one of America's leading basic chemical manufacturers, producing at the rate of \$38,000,000 worth of products a year for nearly every industry in the U. S.

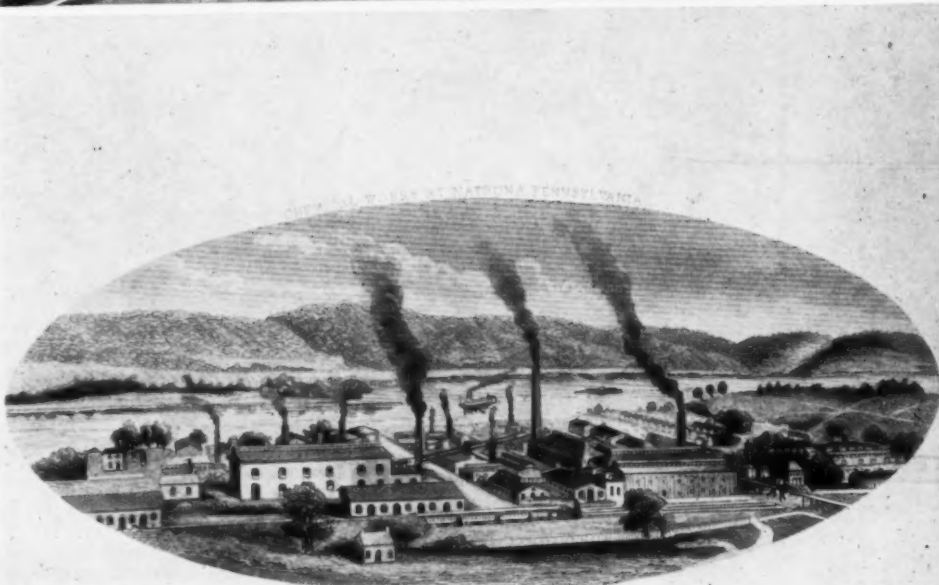
The 100 years between are marked by events, policies and men which have built the company and in their way, often important, have contributed to the growth of the American chemical industry and the development of the country.

Year by year, Pennsalt has developed new products and also never failed to declare a dividend, but today it still manufactures the original brand of lye which laid the foundations for the company's success.

Pennsalt is probably the oldest

From supplying household size packages of lye for making soap at home to one of the largest industrial chemical companies is the 100 year old success story of Pennsylvania Salt Mfg. Co.

Photos top to bottom are: present sprawling, diversified plant of Pennsalt at Natrona, Pa.; an early scene of the plant (center), and the Whitemarsh Research Laboratories at Whitemarsh, Pa., former palatial residence of St. Charlesburg.



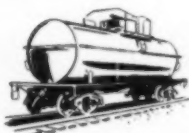
The **+** in Hooker Caustic Soda *is SERVICE*

When you buy a basic chemical like caustic soda, *service* is an important factor in determining your source of supply. As a basic producer, Hooker offers you these advantages:



1. Caustic soda of high purity, low in iron and sulfates . . .

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2. Modern equipment for loading and shipping to maintain that purity from our plant to the user's plant . . .

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An experienced technical service staff to help you use and handle caustic soda.

To you this means minimum processing costs through elimination of variations in quality from shipment to shipment. To make sure that Hooker Caustic reaches you as pure as it leaves us, we coat Hooker tank cars with a special protective lining. Each car is completely insulated and equipped with a heating device to make handling and unloading uniform the year around.

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You can reduce processing costs further through the safe and efficient handling of caustic soda. This is where the specialized knowledge of our technical service staff can help you.

For analyses and specifications on Hooker Caustic Soda, write on your business letterhead for Technical Data Sheet No. 735.

Hooker Caustic Soda is sold in solid, flake or liquid form. Liquid is supplied in 50% and 73% concentration.

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Probably one of the oldest chemical companies in continuous operation in Pennsylvania, Pennsalt is one of the oldest in the United States.

chemical company in continuous operation in Pennsylvania and one of the oldest in the United States. Its name is often misleading for a chemical company. The "salt" is a result of the fact that legislatures in the days the company was founded frowned on chemical manufacturing.

Credited with being founders of Pennsalt are George Thompson Lewis and his brother-in-law, Samuel Fox Fisher. It was they who hopefully purchased an untested patent for making alkalis, interested others in investing funds and organized the new company. Together with Charles Lennig, already a chemical manufacturer in Philadelphia, George Carson and Samuel Simes, they formed the first board of directors, with Mr. Lennig as Pennsalt's first president.

The first plant was built at East Tarentum, now Natrona, 21 miles up the Allegheny River from Pittsburgh on land yielding both salt and coal. Its principal product was to be caustic soda.

Because British and other European chemicals dominated the markets of the East, the founders looked to the growing centers of Pittsburgh, Detroit, Cincinnati and the Midwest for their markets, and the marketing orientation of the company, which has its main offices in Philadelphia, has generally followed this direction ever since.

When the first process failed, the company converted to the conventional LeBlanc process, but losses had nearly wiped out the original investment. Some way to make a profit had to be found quickly. Lewis hit upon the idea of supplying household-size packages of lye for home soap making.

Lye saved the company from bankruptcy and started it on the road to an industrial fame which has survived wars and depressions.

The merchandizing of lye provided a great improvement over the

then prevailing method of using leachings from wood ashes.

In 1855, with the aid of more capital advanced by Lewis, the company produced small cans of household lye. They proved an instant success, so much so that in 1856 the firm had its first profitable year. It has earned a profit every year since.

At first profits were ploughed back to increase plant and equipment, improve the process and add new products. In 1863 Pennsalt paid its first dividend and has paid common stock dividends continuously ever since, one of the largest dividend paying records in American manufacturing.

Following its successful venture with household lye, Pennsalt in the 1860's entered another field, the refining of petroleum to supply kerosene for home lighting. Refineries were set up at Natrona and it is generally believed that the first refined petroleum product exported from America was 500 barrels of Pennsalt "Natrona Oil," a kerosene.

The wild fluctuations of the crude oil market of the time made this unprofitable, however, and Pennsalt discontinued these operations in 1868. It is interesting to note that one of its chemists, who left the company at this time to continue his interests in petroleum, was Henry H. Rogers, later an associate of John D. Rockefeller in founding Standard Oil.

In 1864 Pennsalt made an agreement with the Danes to import cryolite from Ivigtut, Greenland, to add to its supply of raw materials for soda alkalis. Under continuously renewed agreements, Pennsalt has imported this interesting mineral from this source ever since, through the port of Philadelphia.

Cryolite immediately gave the young company a new product, alum, and added a flux to the products already being supplied Pittsburgh's iron and steel industry. But in 1888 its importance increased sharply when

Charles Martin Hall discovered that in its molten state, cryolite was the electrolyte for producing aluminum.

This use soon overshadowed previous uses and later the material also gained importance as an insecticide, as a flux, an opacifier and in the manufacture of abrasives.

In 1872, by then profitably established in the Middle West, Pennsalt built its second plant at Greenwich Point in Philadelphia. This plant, operated until the end of World War II, and the Natrona plant were the scene of Pennsalt's small but interesting career in the field of metallurgy.

Importing pyrites from Spain as a source of sulfur, the company extracted from this ore copper, gold, silver and iron. These operations ceased at Natrona when a fire destroyed the precious metals plant in 1894 and ended at Greenwich after World War I when the company began using domestic sulfur exclusively.

In the 1890's, Pennsalt president Theodore Armstrong determined to go into salt electrolysis for the production of caustic soda. In 1898, after examining several sites, the company purchased land over salt beds at Wyandotte, Michigan, and soon built an electrolytic plant there.

A mercury cell first used was a failure. But in 1904 a young British engineer, Arthur E. Gibbs, offered the company his invention, the Biggs diaphragm cell. Simple and successful, this was adopted and with modifications is today Pennsalt's principal method of producing caustic soda and chlorine.

Through the years, Pennsalt continued to expand its plant facilities and products. Today, it lists in its catalogs more than 300 products, ranging in package size from four-ounce bottles of bactericide to 75-ton tank cars of acids.

Pennsalt is a basic producer of chlorine, caustic soda, hydrofluoric acid, sal ammoniac, refined cryolite, chlorates, ammonia, muriatic, nitric and sulfuric acids, hydrogen peroxide and other heavy chemicals.

In addition to the heavy chemicals department, company products are distributed through the agricultural
(Turn to Page 85)

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SOAP and SANITARY CHEMICALS.

Hand C-P-P Vice-Pres.

Darwin C. Hand has been elected a vice-president of Colgate-



DARWIN C. HAND

Palmolive-Peet Co., Jersey City, N. J., it was announced last month by E. H. Little, president. Mr. Hand has been director of industrial relations for the company since 1942. He first joined Colgate-Palmolive-Peet Co. in 1941 as superintendent of the Kansas City, Kansas, plant.

Born in Berkeley, Calif., Mr. Hand attended Pomona and Claremont colleges, receiving his M.A. degree in government and economics at the latter college in 1930. He makes his home in Summit, N. J., where he resides with his wife and two children.

Sues Over Infant's Death

John Sexton & Co., Chicago wholesale grocery firm was recently named defendant in a suit stemming from the deaths about a year ago of six infants in Grant Hospital, Chicago. The case, filed in Cook County Superior Court, by the father of one of the six-day old infants, seeks \$15,000 damages from the grocery house which, it is alleged, sold to the hospital a detergent containing boron, but without proper warning of the presence of this toxic ingredient in their prod-

uct. A coroner's jury had returned a verdict, charging that the infants died of boron poisoning, which had been introduced into their formula when the Sexton detergent allegedly was used for washing their feeding bottles.

Shampoo Investigation

The House of Representatives has recently authorized the Special (Delaney) Committee investigating the use of chemicals in food products to extend its investigation to cover the use of chemicals in shampoos and other cosmetics and toiletries. The committee, headed by Representative Delaney of New York, continues its investigation of chemicals in foods during the next two months, traveling to the West coast to take additional testimony.

The cosmetic phase of the investigation is not expected to be undertaken until early next year. The Toilet Goods Assn. recently announced its intention to present the views of the cosmetic industry with respect to the subject matter of the investigation at an appropriate time.

Shell Names Shaffer

T. F. Shaffer has been appointed manager of the special products department of Shell Oil Co., it was announced from the firm's New York offices recently. The new manager replaces Dr. R. T. Goodwin whose retirement was announced recently. Mr. Shaffer, a veteran of 14 years with Shell, started as a salesman in Ohio and advanced through many technical and supervisory jobs concerned primarily with lubricants and industrial products. He comes to his new post from his former position as divisional department manager, lubricants, at Los Angeles. A native of Cleveland, Mr. Shaffer received a degree in civil engineering from Case Institute of Technology.

Ayer Advances Fuller

George H. Fuller, chief chemist for Harriet Hubbard Ayer, Inc.,



GEORGE H. FULLER

division of Lever Brothers Co., New York, was recently named plant manager in charge of the company's Long Island City manufacturing and research facilities.

Mr. Fuller, who is credited with many improvements and innovations in the manufacture of creams, lotions, powders, colognes and perfumes, has been engaged for 25 years in research for Harriet Hubbard Ayer.

He succeeds Philip J. Heinle, who moved recently to the parent company with new executive responsibilities in the general purchasing department. A graduate of MIT, Mr. Fuller began his career with Harriet Hubbard Ayer as a production chemist, becoming chief chemist in 1929. In his new capacity, he will continue to administer product improvement and development on cosmetics and related items.

Grocery Practice Rules

Proposed trade practice rules for the grocery industry, constituting a proposed revision of the trade practice rules for the industry as promulgated by the Federal Trade Commission on March 14, 1932, were published re-

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cently by the F.T.C. A hearing on the rules was scheduled to be held at the Federal Trade Commission Building in Washington, Nov. 1.

Sulfuric for Syndets Cut

Use of sulfuric acid for the production of household synthetic detergents was cut to 90 percent of the 1950 consumption rate, it was announced recently by the Defense Production Administration. Formerly the industry was limited to 100 percent of the amount of sulfuric acid used for the purpose in 1950. However, synthetic detergents used for essential or important programs were excepted, as was the use of sulfuric acid needed for the production of insecticides and other pesticides.

In announcing the cut, D.P.A. directed the National Production Authority to order "pin-point" restrictions on the use of scarce chemicals for other purposes, so long as they will not have the effect of reducing an industry's production.

Although the U. S. is currently producing about 60,000 tons more of sulfur than a year ago, demand is heavier than last year, particularly from defense and defense supporting industries. The U. S. is expected to produce about 5,252,000 tons of native sulfur in 1951, compared with a 1950 output of 5,188,000 tons.

Faresac Co. Changes Name

Faresac Co., Dolton, Ill., producers and refiners of fatty acids and rosins, recently announced the company name had been changed to Farac Oil & Chemical Co., with plant and office at 145th St. and Indiana Ave., Chicago 27.

At the same time it was announced that Andrew J. Kestly, formerly vice-president of Standard Varnish Works, Chicago, and James T. Leavitt, previously vice-president of Central Solvents & Chemicals Co., Chicago, have joined the company. Chris J. Limber and William J. Limber, who have been associated with the company since its inception remain as the other principals. The company is specializing in the processing of tall oil.

Elect P & G Man at Safety Show

JOHAN R. BOLLMAN, central safety engineer, industrial relations div., Procter & Gamble Co., Cincinnati, was elected chairman of the National Safety Council's chemical section at the 39th National Safety Congress in Chicago, Oct. 8 to 12. E. J. Meyers, assistant manager of the division of safety and fire protection, E. I. du Pont de Nemours & Co., Wilmington, was chosen secretary of the section.

Among speakers at the three-day conference of chemical industry safety specialists was W. Williamson, industrial hygienist and toxicologist, Procter & Gamble Co. His topic was, "What Supervision Should Know About New Processes, Raw Materials and Products."

Another timely topic was a presentation of disaster plans for chemical plants by Lt. Col. R. C. Stratton, supervising chemical engineer, Travellers Ins. Co., Hartford, Conn. Other discussions by some fifteen programmed speakers included methods of safe handling of various hazardous chemicals, causes of fires and explosions with appropriate measures for the control, cleaning tank cars, correct labeling, and accident prevention in research and development laboratories.

Manufacturers of soaps, protective creams and sanitary maintenance materials and equipment displaying

their products at the Safety Congress Exposition included:

John H. Breck, Inc., Springfield, Mass., industrial hand cleaners, hair and scalp preparations; Chemical Service of Baltimore, Baltimore, waxes, soaps, cleaners, disinfectants and chemical specialties; Chemical Specialties, Inc., Springfield, Mass., industrial hand creams and cleansers; Diversy Corp., Chicago, industrial maintenance and cleaning chemicals; Dunn Products, Chicago, hand cleaners and dispensers; Finneil System, Inc., Elkhart, Ind., floor maintenance machines; Franklin Research Co., Philadelphia, floor waxes and floor maintenance materials; Hild Floor Machine Co., Chicago, floor cleaning and maintenance equipment and supplies; Hillyard Chemical Co., St. Joseph, Mo., floor treatments, building maintenance, sanitation products, equipment and materials; Walter G. Legge Co., New York, safety floor polishes, conductive floor coating; Lightfoot, Schuiz Co., New York, skin cleaners, lotions, bar soap, dispensers; Lincoln-Schneider Floor Machinery Co., Chicago, industrial vacuum machines, floor scrubbers, polishers, scarifiers, and auto scrubbers; Masury-Young Co., Boston, safety floor treatment and maintenance materials; Milburn Co., Detroit, protective creams and clothing; Multi-Clean Products, Inc., St. Paul, floor maintenance equipment and materials; Onox, Inc., San Francisco, skin toughener for athlete's foot prevention; G. H. Packwood Mfg. Co., St. Louis, industrial skin cleansers and dispensers; Sani-mist, Inc., Philadelphia, athlete's foot preventive; Stepan Chemical Co., Chicago, industrial skin cleansers; Sugar Beet Products Co., Saginaw, Mich., skin cleansers and cleaners; G. H. Tennant Co., Minneapolis, industrial floor maintenance machines; West Disinfecting Co., Long Island City, N. Y., disinfectants, deodorants, etc.; Wyandotte Chemicals Corp., Wyandotte, Mich., detergents.

Loss Leader Ban Asked

A set of 22 trade practice rules designed to "eliminate and prevent" unfair trade practices was proposed recently by the Federal Trade Commission in Washington. Under the new rules "loss leaders" would be prohibited. Also declared as unfair under the proposed rules, oral hearings on which were to be held beginning Nov. 1, is price discrimination among purchasers of similar goods where such action might tend to create a monopoly; discrimination in payment of brokerage fees or commissions and advertising allowances.

In discussing its prohibition of "loss leaders," the F.T.C. said that the marked down goods were intended to encourage "the purchase of other merchandise on which such loss is recouped." This practice the F.T.C. regards as deceptive. "Fake bargains" that deceive the public, use of fictitious prices in marking down commodities, false and misleading terms of sales and invoices, defamation of competitors, lottery schemes and unfair "exclusive deals" would also be outlawed if the proposed rules are adopted. The present regulations, which the new set replaces, date back to 1932.

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U.S.P.
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Titre	4° — 7°C.
Cloud Point	39° — 45°F.
Color Lovibond 5¼" Red.....	1.0 — 2.0
Color Lovibond 5¼" Yellow...	8 — 12
Unsaponifiable %	1.5% max.
Saponification Value	198 — 201
Acid Value	197 — 200
% F. F. A. as Oleic Acid.....	99.0 — 100.0
Iodine Value (WUS)	89 — 92

THIS low titre White Oleine (U.S.P. Oleic Acid) is a multiple distilled product made entirely from selected animal fats. A Gross & Company's modern distillation process yields a White Oleine superior in color, stability and free fatty acid content. *Write today for samples and also our new booklet, "Fatty Acids in Modern Industry."*

DISTRIBUTORS: *George Mann & Co., Inc., Providence 3, R. I.; J. W. Stark Co., Detroit 2, Mich.; Charles Albert Smith, Ltd., Toronto 3, Canada; Braun-Knecht-Helmann Co., San Francisco 19, Calif.; Thompson Hayward Chemical Co., Kansas City 3, Mo. (and branches); Smead & Small, Inc., Cleveland 15, O.; James O. Meyers & Sons, Buffalo, N. Y.; J. C. Acherman Co., Pittsburgh, Pa.; Baker Industrial Oils Co., Philadelphia 7, Pa.; Moreland Chemical Co., Spartanburg, S. C.; Southern Industrial Sales Corp., Tuscaloosa, Ala.; Braun Corp., Los Angeles 21, Calif.*

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New Detergent Additive

"Sequet," a new additive-type compound for use in conjunction with alkaline bottle-washing solutions to increase cleaning action and detergent qualities was announced recently by Diamond Alkali Co., Cleveland. Combining water-sequestering chemicals and synthetic wetting agents in a balanced ratio, the new compound is designed to improve efficiency and reduce costs of bottle-washing operations. In addition to eliminating smoky, cloudy or "blue" bottles through its quick penetration and thorough removal of such soils as syrup deposits, sugar residues, yeast mold, oil and grease contamination and paper and foil labels, the material is also recommended for cleaning beverage processing and handling equipment. Water hardness determines the amount of the free-flowing, dry additive required in any instance. Generally, a maximum of one percent "Sequet" is added for each grain of water hardness, based on the quantity of alkali needed to charge the washer at desired strength. "Sequet" is packed in 300 pound and 125 pound containers.

Malaya Copra Output

Malaya produced 15,800 tons of copra in August, compared with 15,663 tons in July, bringing total production for the first eight months of 1951 to 101,180 tons, according to figures released from Singapore recently. Copra exports totaled 2,343 tons in August, of which 1,675 tons went to the United Kingdom, and 668 tons to the U. S. Total exports for the eight month period were 17,495 tons. Coconut oil exported in August amounted to 8,010 tons, as compared with 3,680 tons in July. The year's total through August was 38,509 tons.

Frank H. Merrill Is Dead

Frank H. Merrill, president of Los Angeles Soap Co. since 1928, and associated with that concern for 54 years, died at the age of 80, Oct. 12 of a cerebral hemorrhage at Good Samaritan Hospital in Los Angeles. Born in Newburyport, Mass., Mr. Merrill was graduated from Massachusetts Institute of Technology as a chemical

engineer. He joined Los Angeles Soap Co. as a chemist in 1897.

Among the technical developments with which he is credited are



FRANK H. MERRILL

the discovery of tri-methylene in distilling glycerine. This discovery resulted in the improvement of the quality of the glycerine. He developed in 1918 what is believed to have been the first satisfactory granulated soap for use in electric washing machines. He was also responsible for the development of a number of detergents in recent years, including the one which bears his name.

Besides being head of Los Angeles Soap Co., said to be the fourth largest in the world, Mr. Merrill was president of Copra Oil and Meal Co., Ltd., White King Soap Co. and California Rendering Co. He was a member of the board of directors of the Farmers & Merchants National Bank. A member of the Association of American Soap & Glycerine Producers, Inc., he served at one time on the board of directors of that organization.

Surviving are two sons, Paul C. Merrill of San Marino and Willis H. Merrill of Long Beach and a daughter, Miss Ruth E. Merrill of Los Angeles.

New "Kreml" Agent

The appointment of Monroe F. Dreher, Inc., New York, to handle the national advertising of R. B. Semler, Inc., New Canaan, Conn., makers of "Kreml Shampoo" and related hair products, was announced recently by R. B. Semler, president.

Venezuelan Soap Crisis

Venezuelan soap manufacturers are currently facing what is described as a crisis in their industry, as a result of severe competition from imported soap powders. A meeting was held recently in Caracas at which representatives of the Venezuelan soap industry conferred with government representatives to determine what steps should be taken to protect Venezuelan soap manufacturers. Another subject discussed was the competition presented by local butter producers who are reported manufacturing soap from butter residues on which no import duties need be paid.

Largest "Trend" Display

What is believed to be the largest mass display of "Trend" synthetic detergent, made by Purex Corp., South Gate, Calif., was featured recently in store windows and the cleansers department of Joseph's Food Town super market in Toledo, O. The display was said to have been made up of 750 cases of the synthetic detergent, of which 350 cases were reported sold in ten days. A one-cent sale and other promotions including multiple unit sales at reduced prices were featured. The product is being heavily promoted in principal marketing areas from west to east, with national distribution planned for the near future.

Perfume Course Speakers

Among the guest speakers scheduled to address the Aromatics Course on Industrial Applications of Perfumes and Flavors, being conducted at New York University by Samuel Klein, were: Edward Sagarin of Givaudan-Delawanna, Inc., New York, Nov. 5, who was to discuss the "Role of Perfume in Toiletries"; Dr. John Wenneis of Norda Essential Oil and Chemical Co., New York, Dec. 3, will cover the "Chemistry of Flavor Materials"; Dr. Norman Larsen of Polak & Schwarz, Inc., New York, Dec. 17, is to discuss "Vanilla and Related Aromatics" and G. H. Ammersbach of Fritzsche Brothers, Inc., New York, Jan. 7, will speak on the "Development of a Perfume."



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CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE
HYDROGEN • DRY ICE • SYNTHETIC DETERGENTS • GLYCOLS
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DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

This booklet is loaded with information on Carbose* (our sodium carboxymethylcellulose). It tells you how and why Carbose has been able to lift the detergency of synthetic formulations until they are superior to normal soap products.

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SOAP and SANITARY CHEMICALS

Columbia-Southern Changes

Several executive appointments in the sales organization of Columbia-

in Pittsburgh as Columbia-Southern director of sales, and A. W. Reynolds has been made administrative assistant



A. W. REYNOLDS



H. W. GLEICHERT



E. W. HALEY

Southern Chemical Corp., Pittsburgh, were announced recently by W. I. Galliher, vice-president in charge of sales. Affected is H. W. Gleichert, who becomes assistant to the vice-president in the new sales organization. E. W. Haley, formerly located in New York City, has moved to headquarters

to the vice-president in charge of sales.

The moves follow recent changes in the corporate name when the organization became the Columbia-Southern Chemical Corp., a subsidiary of Pittsburgh Plate Glass Co. The corporation is the producer of chlorine, caustic soda, soda ash, etc.

Bruell Forms Polarome Co.

Polarome Manufacturing Co., New York, has been organized by William O. Bruell to manufacture perfuming materials, it was announced recently. The firm has offices and laboratories at 73 Sullivan St., New York. Mr. Bruell was the senior partner of Centflor Manufacturing Co., New York, from its founding in 1941 until July 1, 1951, when he terminated his connection with the firm. He has been in the essential oil and aromatic chemicals and related fields since 1922. Polarome recently acquired the three story building it occupies at 73 Sullivan St. The building formerly housed Fleuroma, Inc.

Sulfuric Acid Under CPR 22

Sulfuric acid has been added to the list of chemicals which may continue to be priced under the General Ceiling Price Regulation, the Office of Price Stabilization announced recently. Manufacturers electing to price their chemical products under the Manufacturers' General Ceiling Price Regulation, CPR 22, have the option pending issuance of a "tailored regulation." It will be prepared after the National Production Authority announces its

new sulfur allocation program, which was to have been issued late in October. The option is extended in Amendment 3 to Supplementary Regulation 12 to CPR 22, effective Oct. 24.

Joins Otto Gerda Co.

Raymond D. Matthaei, identified with the fats and oils business for the past 19 years, 10 of which were as secretary of Pompeian Olive Oil Corp., Baltimore, recently joined Otto Gerda Co., New York, as manager of its fats and oils division. For the past nine years Mr. Matthaei has managed the trading department of Smith-Weihman Co., New York.

Discuss Engine Cleaning

Cleaning and reconditioning of diesel engines and engine parts were among problems to which attention was given by railroad mechanical maintenance men at the recent meeting of the Allied Railroad Supply Association in Chicago. Among exhibitors in the concurrent trade show were Dearborn Chemical Co., Chicago; Oakite Products, Inc., New York; Turco Products, Inc., Los Angeles and Wyandotte Chemicals Corp., Wyandotte, Mich.

Buys Amer. Potash Stock

Heyden Chemical Corp., New York, recently sold to Mathieson Chemical Corp., Baltimore, all the 134,725 shares of stock of American Potash and Chemical owned by Heyden. The sale is in line with Heyden's policy of concentrating its activities on those fields in which it is well established and to work closer toward the integration of its production facilities, according to John P. Remensnyder, president. The company is currently engaged in an \$8,500,000 expansion program.

Elected to the board of American Potash and Chemical as a result of the stock sale are Thomas S. Nichols, president and chairman of Mathieson; John C. Leppart, executive vice-president, and Sinclair Richardson, Robert G. Stone and Gardiner Symonds, all Mathieson directors.

Consulting Chemists Elect

Officers elected at the annual meeting of the Association of Consulting Chemists and Chemical Engineers, Inc., held in New York, Oct. 23, include: president, Erwin Di Cyan, Di Cyan & Brown, New York; vice-president, Earl D. Stewart, Schwarz Labs., Inc., New York; secretary, William C. Dowden, Jr., technical director, Ledoux & Co., New York, and treasurer, Foster D. Snell, Foster D. Snell, Inc., New York.

Victor Names Conant

Victor Chemical Works, Chicago, recently announced the appointment of Edward L. Conant as superintendent of its Chicago Heights, Ill., plant. He comes from Victor's Morrisville, Pa., factory, of which he had been superintendent since it started operations in 1948. He succeeds H. B. Terry who was recently made general superintendent of all the company's phosphate plants. Other recent personnel changes include appointment of Donald G. Frye as superintendent and Howard Softley as production superintendent at the Morrisville plant and LaVern O. Streitmatter as production department staff assistant in the Chicago office.



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Methocel promotes suspension two ways. First, through its efficient thickening action and, second, through its protective colloid action. In the production of liquid waxes, metal cleansers and many polishes, Methocel effectively minimizes the settling and caking of dispersed solids.

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Soap Man-Hours Drop

Direct factory man-hours required in the production of soap and glycerin products declined almost one per cent in 1949, according to a report released last month by Robert R. Behlow, regional director of the U. S. Department of Labor Bureau of Statistics. This reduction, although small, is significant because it was achieved despite a drop of approximately six per cent in production. Although a decline in production usually results in higher direct unit labor requirements, Mr. Behlow pointed out that this was offset by the installation of new processing equipment, more favorable experience in spray tower operation, and a trend toward use of larger cakes and packages of soap.

The lower volume of production, however, was reflected in an eight per cent increase in indirect man-hours required per unit of production. Indirect man-hour requirements in individual plants showed wide variation in both directions, some indicating substantial increases, others reporting relatively large decreases. The installation of conveyors and powered mobile material-handling units by some firms tempered the rise in indirect man-hours.

This report extends through 1949 the statistics presented in earlier B.L.S. publications on man-hours expended per unit in the manufacture of soap and glycerin. The productivity

statistics are based on production and man-hour data submitted to the Bureau for 27 plants by 19 representative firms, covering manufacture of toilet soap, spray soap, soap flakes, bar laundry soap, and lather shave cream.

Various factors affecting productivity are discussed in the Bureau's bulletin, which also furnishes detailed information on the particular factors influencing the manufacture of the individual products. Also included are charts showing trends in direct and indirect unit man-hour requirements, and trend of sales of solid soap products. The booklet may be obtained free from the regional office of the Bureau of Labor Statistics, 341 Ninth Avenue, New York 1, N. Y.

Louis H. Soule Dies

Louis H. Soule, 86, retired sales manager of Bon Ami Corp., New York, died Oct. 7 in White Plains, N. Y., Hospital. He had resided at 5 Old Mamaroneck Road, in White Plains.

At the first meeting of the year of the executive committee of the American Society of Perfumers, at Grossinger's, Monticello, were left to right: Basil Pegushin, Paul A. Sanders, Frank Spitaleri, all board members, W. Dunney, Sr., first president of the Association; Bernard Polak, Dr. A. T. Frascati, second president of the association; L. de Hoyos, Jr., W. Barlow, secretary, F. Fielding, president and George Tombak, a past president.

CD&CA Elects Officers

Election of officers for the coming year will be the highlight of the November 15th luncheon meeting of the Chicago Drug and Chemical Association, to be held at the Palmer House. The following slate was selected by the nominating committee: for president, Stanley M. Lind, Harry Holland & Son; vice-president, Norman A. Grimm, Chas. Pfizer & Co.; secretary, Vince Farrer, Ace Carton Corp., and treasurer, Timothy J. Callahan, Callahan Chemical Corp. Directors for two years: D. H. Coale, J. T. Baker Chemical Co.; William G. Lister, Central Products Co.; A. H. Hardt, Eli Lilly and Co.; William J. Quick, Distillation Products Industries, Division of Eastman Kodak Co., and L. J. Killilea, Hercules Powder Co. Also serving as a member of the board ex-officio is Ralph A. Olson, S. B. Penick & Co., retiring president of the organization.

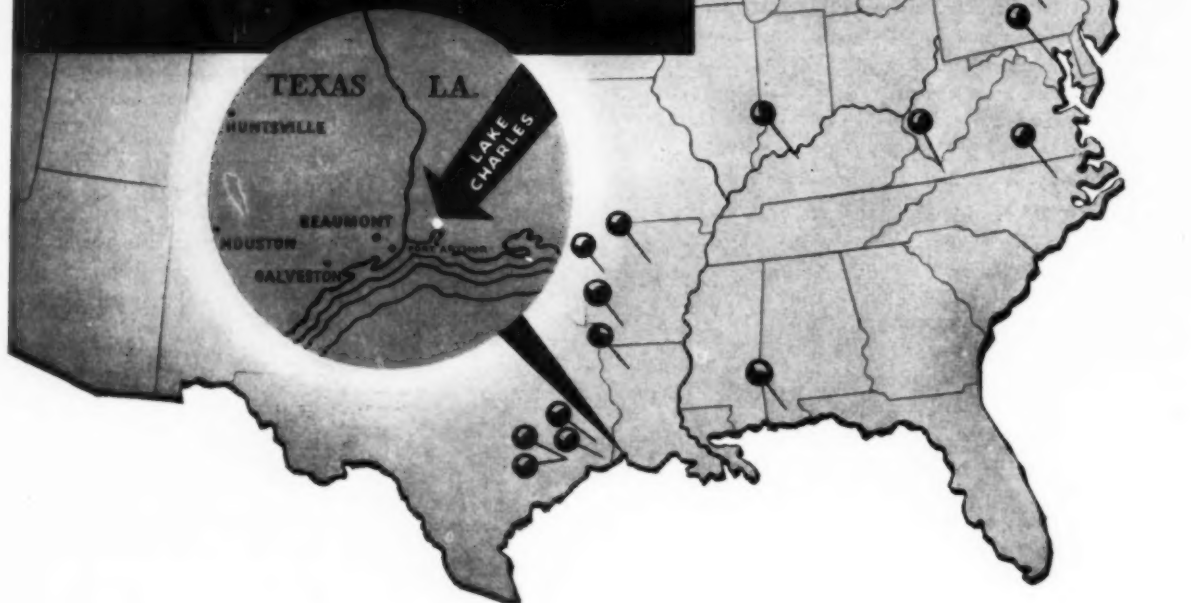
Income tax problems and pointers were discussed by Joseph Bankowski of the Department of Internal Revenue at the Oct. 23 meeting, held at the Palmer House.

TGA Section Meets Dec. 5

The next meeting of the Scientific Section of the Toilet Goods Association will be held at the Waldorf-Astoria Hotel, New York, Wednesday, Dec. 5, it was announced recently by E. J. Masters, chairman of the Section.



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Mathieson service starts at the plant with top quality chemicals...produced in the ever-increasing quantities demanded by American industry...shipped when and where needed. From Lake Charles, Louisiana, for example—in the heart of the thriving Gulf Coast region—Mathieson delivers by ship, train and truck on reliable schedules, these heavy chemicals:

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Sulphuric Acid • Processed Sulphur • Soda Ash
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9297

SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

Sorensen to ADM Board

Election of Samuel O. Sorensen to the board of directors of Archer-Daniels-Midland Co., Minneapolis, was



S. O. SORESEN

announced following the company's annual stockholders' meeting, Oct. 9. A native of Maine, Mr. Sorensen first joined A-D-M as a chemist in March, 1923. During the following years he served successively as chief chemist, technical director, and in 1947 was named vice-president in charge of research. Recent products developed and improved in the company's laboratories include fatty acids, fish oils, chemical specialties and soybean and linseed oils.

Mr. Sorensen is a member of the American Chemical Society and a past president of the American Oil Chemists' Society. His clubs include Minneapolis Athletic and Interlachen Country Club.

Cos. Chemists' Program

Germicidal soaps, foaming properties of surface-active agents, stability of detergents and soaps and deodorizing properties of chlorophyll in dentifrices are among the papers to be presented at the annual technical meeting of the Society of Cosmetic Chemists at the Biltmore Hotel, New York City, Dec. 6. In addition there will be a sound moving picture on photomicrographic techniques for studying hair soil and detergency. This is to be shown by V. M. Votaw of Procter & Gamble Co., Cincinnati. Dr. Walter J. Hamberger of Fabric

Research Laboratories of Boston will discuss the effect of chemical treatments on the mechanical behavior of the hair.

The paper on germicidal soaps will be delivered by Professor C. A. Lawrence of the University of Michigan. H. W. Zussman of Alrose Chemical Co., Providence will speak on foaming properties of surface-active agents, and G. N. Miles of Colgate-Palmolive-Peet Co., Jersey City, N. J., is scheduled to present a study of the stability of synthetic detergents and soap. Dr. Louis Barail of U. S. Testing Co., Hoboken, N. J., will speak on chlorophyll in dentifrices.

50 Years with Nat. Aniline

Reginald P. Manners, treasurer of National Aniline Division, Allied Chemical & Dye Corp., New York, completed 50 years of continuous service in the industry on Oct. 1. Mr. Manners came to National Aniline from Century Color Corp. in the merger of chemical companies in 1917.

New Johnson Cleaner

A new floor cleaner that is said to deodorize as it cleans was announced recently by S. C. Johnson & Son, Inc., Racine, Wis. "Emerel," as the new cleaner is named, is recommended for use on all types of floors, walls and woodwork. It is said to loosen dirt, grime and stains without scrubbing, yet contains no abrasives, no free alkali or harmful acids. It is applied by spreading on the floor or other surface and is gently agitated.

Malayan Palm Oil Data

Palm oil shipments from Malaya declined in August to 2,597 tons, as against 3,002 tons in July, it was reported recently in Singapore. Production of palm oil in August was greater than in the previous month however. In August, Malaya's output of the oil totaled 3,913 tons, as against 3,249 tons in July. The bulk of the palm oil exported went to the United Kingdom, with none going to the U. S.

P & G Votes to Diversify Output

A MENDMENTS to the articles of incorporation of Procter & Gamble Co., Cincinnati, were approved by stockholders at the annual meeting in Cincinnati, Oct. 9. The action enables the company to broaden its activities in fields related to those in which it now operates. In addition, a stock option plan for officers and certain employees was approved with 300,000 shares of the authorized but unissued common stock being set aside for allotment under the plan.

Richard R. Deupree, board chairman, told stockholders that "real growth and progress has been made throughout the company during the past year." He cited the problem of operating a business in an inflationary period, and mentioned as particularly difficult efforts to catch up on a 10 year building program. Decisions on additions to productive capacity, changed equipment or improved processes had to be made with the inflationary factor in mind, he said. As a result of production economies made

possible by improved processes, equipment and marketing, the company has been able to keep the prices of its finished products down despite the sharp increase in wages and taxes, he declared.

To meet the increasing demand for dissolving pulp, the company has decided to expand its facilities for producing this material and has been given a certificate of necessity by the government to construct a plant near Foley, Fla., for making pulp from wood, Mr. Deupree stated.

Some of the company's packaged laundry soaps have lost business to its synthetic detergent brands, but soap brands still represent a sizable portion of the volume, he said.

Mr. Deupree also pointed out that with the rapid expansion of P&G's foreign business in the past few years, money was borrowed in various countries. This was done with confidence that these loans would be repaid within a reasonable time from earnings in the foreign business, he said.

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Liquid 70-73%, Standard Grade

Flake and Solid, 76% Na₂O

CAUSTIC POTASH

Liquid* 45%, Flake and Solid

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Light and Dense

As a primary source of supply, Westvaco can give you the service you require from our expanding output of high-quality alkalis.

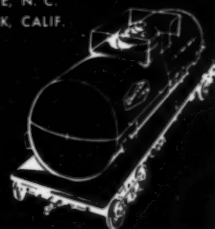
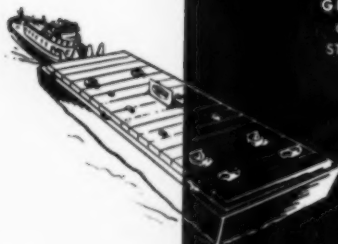
With delivery from various Westvaco plants via barge, tank car, tank-truck or drums (whichever is most economical), you may be able to save time and money by talking things over with us. Just say when and where!

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Heads Lever Research

Dr. L. B. Parsons has been named director of research and development for Lever Brothers Co.,



L. B. PARSONS

New York, it was announced recently by W. H. Burkhart, vice-president in charge of production. Dr. Parsons joined Lever Brothers as a research supervisor in 1939 and served successively as chief chemist, manager of basic research laboratories, and assistant director of research and development. He continues to be located at the Lever research laboratories in Cambridge, Mass.

Dr. Parsons was graduated from Syracuse University in 1919 and received a master of science degree in 1921 at the University of Wisconsin and a Ph.D. degree in 1923. He then became associated with the Cudahy Packing Co., Chicago, and was research director when he resigned in 1939 to join Lever Brothers.

A member of the American Chemical Society, the American Oil Chemists Society, the American Association for the Advancement of Science, and the American Society for Testing Materials, Dr. Parsons has been active in ACS affairs in the Omaha and Northeastern Sections, and has served as vice-president for soap and detergents of AOCS. He also has served eight years on the committee on soap and detergents of the ASTM. He succeeds Dr. Theodore H. Rider, who resigned recently because of illness.

Heads C-P-P Radio, TV

George T. Laboda has been appointed assistant to the director of radio and television for the Colgate-

Palmolive-Peet Co., Jersey City, N. J., it was announced recently by R. E. Healy, vice-president in charge of advertising. Mr. Laboda joined Colgate in 1946 and until the present time has been in charge of advertising research in the market research department.

Soap Assn. Meets Jan. 22-3

A realistic approach to the industry's immediate problems and long-range goals is being stressed in program planning for the 25th Convention of the Association of American Soap & Glycerine Producers. The meeting will be held at the Waldorf-Astoria Hotel, New York, on January 22-23, 1952. A large registration is expected.

Authorities with industrial and governmental backgrounds will interpret the effect of world events on specific production and sales problems of soaps, synthetic detergents, glycerine and fatty acids. At the same time, the lighter-side is not being neglected. Entertainment talent on a par with last year's headliners—Eddie Cantor, Dinah Shore, Sam Levenson—is being rallied for the 25th Anniversary Banquet.

The theme of the Convention is "Get the Whole Picture"—highlighting the fact that many elements beyond a company's own business horizon are now vital in making decisions. Information on raw materials supply, marketing, government relations and economic trends will be presented, using "panels" rather than individual speakers in some cases. Other talks will fill-in the background of the specialist in one area, so that he can relate his problems to the whole picture.

Divisional sessions in the field of industrial and specialty soaps and detergents will be held. Glycerine will come in for special consideration, particularly as to long-term production and usage trends. The newly organized fatty acid producers group is planning a membership meeting on Monday, January 21st, in addition to participation in the general program.

Chairman of the convention committee for 1952 is M. L. Westering of Swift & Company, assisted by J. A. Reilly, Colgate-Palmolive-Peet Company. Other committee members are:

Ayer Names Breckenridge

Appointment of Robert F. Breckenridge as advertising and sales promotion manager of Harriet Hub-



R. F. BRECKENRIDGE

bard Ayer, Inc., Long Island City, N. Y., cosmetic and perfume division of Lever Brothers Co., New York, was announced recently by Keith Porter, president of Ayer. A graduate of Yale University, Mr. Breckenridge was formerly associated with the Gemex Corp. as director of advertising, and with Revlon Products Corp., and Johnson and Johnson. Mr. Breckenridge succeeds D. N. Jones, resigned.

C-P-P Plant

(From Page 37)

One of the most important departments in the organization's entire setup today is the department of research and development. More than 100 scientists, chemists, engineers, cosmeticians and technicians are always trying out new ideas for new products—trying out still other ideas to make the old products better.

Fred L. Stephens is superintendent of the Kansas City plant.

S. D. Andrews, General Mills, Inc.; L. Flett, National Aniline Division, Allied Chemical & Dye Corporation; I. P. MacNair, MacNair-Dorland Company; E. D. McLeod, Arnold, Hoffman & Company, Inc.; M. J. Roche, Lever Brothers Company; R. O. Trowbridge, Colgate-Palmolive-Peet Company; W. G. Werner, Procter & Gamble Company; and R. H. Young of Davies-Young Soap Company.



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shipment exactly . . . as per sample.**

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AATCC Discusses Detergents

PAPERS dealing with the adsorption of detergents, sequestering agents, and optical bleaching agents were among those presented at the 30th national convention of the American Association of Textile Chemists and Colorists, held October 17 to 19 at the Hotel Statler, New York. Ninety displays were included in the textile chemistry exposition, which comprised processing oils and chemicals, finishes and auxiliaries, wet process and testing apparatus and dye-stuffs.

In the report on "Quantitative Data on the Adsorption of a Detergent by Cotton Sheetting Under Textile Processing Conditions", by L. H. Flett, L. F. Hoyt and J. Walter, National Aniline Division, Allied Chemical & Dye Corp., New York, it was pointed out that adsorption increases rapidly with the increasing concentration of detergent up to a concentration of .2 per cent on the pure organic basis. An increase in temperature increases the rate of adsorption, and for all practical purposes, the adsorption increases with time; however, each particular fiber has a maximum value for adsorption, which depends on the temperature and concentration.

The value and limitations on the use of brighteners for improving the appearance of textiles were discussed in the paper "Textile Applications of Brighteners" by J. P. G. Beiswanger, General Aniline & Film Corp., Easton, Pa., and Opal I. Sherburne, General Dyestuff Corp., New York.

The effects of sequestering agents on wool during the scouring process, the prevention and removal of iron stains from cotton, and the use of organic complexing agents to stabilize peroxide bleach solutions were discussed in the report on "Sequestering Agents in Textile Applications" by J. J. Singer and F. C. Bersworth, Bersworth Chemical Co., Framingham, Mass.

Among the exhibitors in the exposition were the following: Arnold Hoffman & Co., Inc., Providence,

R. I.; Bersworth Chemical Co., Framingham, Mass.; Dexter Chemical Corp., New York; E. F. Drew & Co., Inc., New York; Emery Industries, Inc., Cincinnati; National Aniline Division, Allied Chemical & Dye Corp., New York; National Milling & Chemical Co., Philadelphia; Nuodex Products Co., Inc., Elizabeth, N. J.; Nopco Chemical Co., Harrison, N. J.; Onyx Oil & Chemical Co., Jersey City, N. J.; Richmond Oil, Soap & Chemical Co., Richmond, Va.; Rohm & Haas Co., Philadelphia; Sandoz Chemical Works, Inc., New York; Warwick Chemical Co. Div. Sun Chemical Corp., Long Island City, N. Y.; Jacques Wolf & Co., Clifton, N. J. and Wyandotte Chemicals Corp., Wyandotte, Mich.

Poland Joins Sergeant

The appointment of George W. Poland, Jr., as vice-president of E. M. Sergeant Pulp and Chemical Co., New York, and his election as president of the New Jersey subsidiary, Sergeant Chemical Co. of Newark, N. J., was announced recently by Rudolph Aeberle, president of the New York company. The firm has been a distributor of industrial chemicals for 84 years. Previously Mr. Poland was assistant sales manager of Stauffer Chemical Co., New York, with which he had been associated for 15 years. Earlier he was with American Agricultural

GEORGE W. POLAND



Chemical Corp. He is a member of the board of directors of the Salesmen's Association of the American Chemical Industry.

Dixon Gair Art Head

The appointment of Kenwood Dixon as art director for Robert Gair Co., New York, was announced recently. He is coordinating the art efforts of the firm. Mr. Dixon was formerly art director for Kenyon and Eckhardt, Inc., New York advertising agency, for many years. He studied at the Art Students League, and is a graduate of Pratt Institute, Brooklyn.

Honor Jacob Manheimer

Jacob Manheimer, president of the New York essential oil firm bearing his name, was honored at a luncheon at Toots Shor's restaurant in New York, recently. The affair was a tribute to his record of 75 years in the essential oil industry and was sponsored by the Cosmetic Importers, Buyers and Suppliers Assn. Mr. Manheimer, in spite of the fact that he is in his 87th year, is still active in the business.

Among those who addressed the luncheon, the toastmaster for which was Ray Schlotterer, managing director of the Essential Oil Association, were Edward V. Kileen, who has been associated with George Lueders & Co., New York perfuming materials firm for 60 years; William H. Rowse of Norda Essential Oil Co., New York, a veteran of 50 years in the industry; Mike Lemmermeyer of Aromatic Products, Inc., New York, 44 years in the field; George Uhe, of George Uhe & Co., with a 40 year record, matched by that of Val Fisher of Dodge & Olcott, Inc., New York; Frazer V. Sinclair, editor and publisher of *Beauty Fashion and Drug & Cosmetic Industry*, New York, for the past 30 years; Stephen L. Mayham, executive vice-president of the Toilet Goods Assn., and in the industry for over 30 years; Gerard Danco of Gerard J. Danco, Inc., New York, and president of the Essential Oil Association, and a 30 year man in the industry, and Louis Gampert of Felton Chemical Co., Brooklyn, a veteran of 20 years.



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MAYPONS—Unique surface active agents; prolific foam; high
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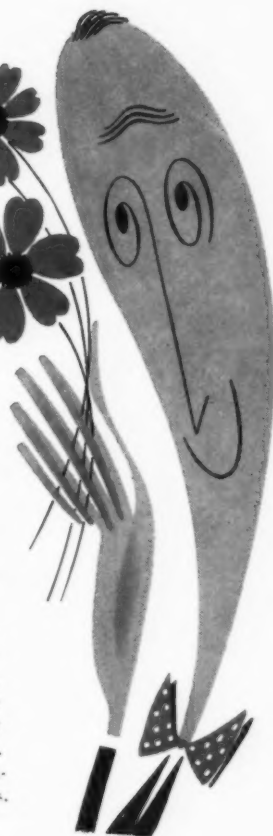
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Use "Alpine Violet" for its basic floral note . . . to exalt all florals and to improve their lasting qualities. "Alpine Violet" is ideally suited for use in soaps. Remember it when you want extra punch . . . new verve . . . in bouquets. "Alpine Violet" is stable, alkali-resistant and non-irritating to the skin. It's superior to Hydroxycitronellal . . . with an odor of true mountain cyclamen. "Alpine Violet" gives subtle emphasis to such florals as Lily of the Valley, Japanese Lily, Wild Reseda, Honeysuckle, Lime Blossom, and to all floral bouquets. Practically water-white liquid . . . unusually fragrant . . . "Alpine Violet" is offered in three concentrations, all created to intensify floral effects.

But whatever the product, whatever the fragrance, let Du Pont help you with your perfume problems. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Aromatics Section, Wilmington 98, Delaware. Branch offices: Atlanta, Boston, Charlotte, Chicago, New York, Philadelphia, Providence, San Francisco.

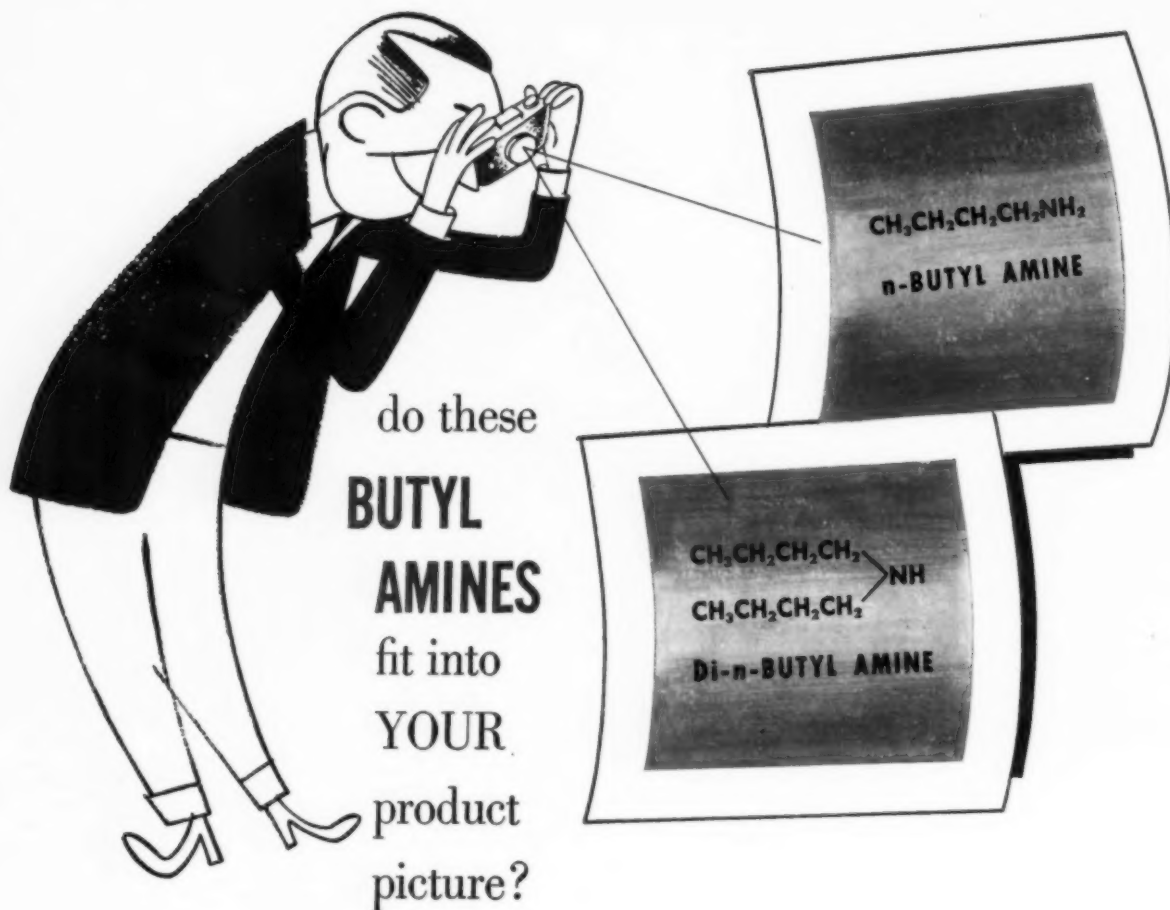
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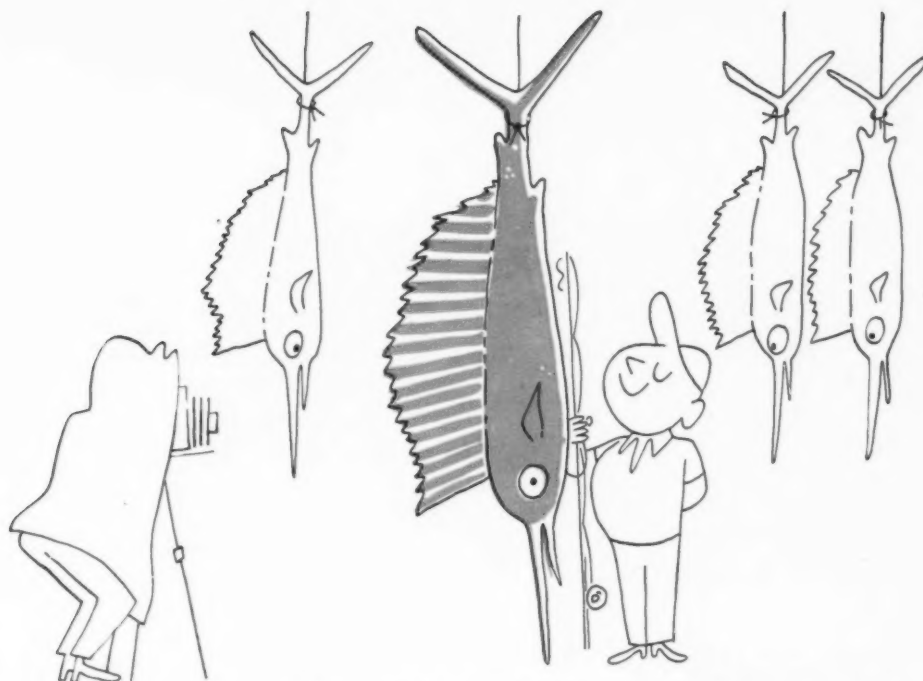
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A NORDA ORIGINAL has a different, distinguished bouquet. It's a modern, old-fashioned odor—spicy-fresh, exciting, alluring.

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NOVEMBER, 1951



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FOR SOAPS



Every advantage of the original products without the disadvantages

Use these synthetic replacements in your soap formulations . . . they offer you splendid opportunities for economy. They are less expensive than the natural oils, yet give the same full-bodied strength, richness and aroma.

Bergamot, Geranium and Hydroxallys are stable, nondiscoloring, uniform and adaptable . . . excellent and *successful* replacements in every way. For working samples of all three, write Bush Aromatics, Dept. AR 10, on your company letterhead.

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P.O.D. Scouring Powder Bid

Bids on 39,120 pounds of scouring powder were received in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., from: Imperial Products Co., Philadelphia, 6.85 cents; Chemical Manufacturing & Distributing Co., Easton, Pa., 5.7 cents a pound; Safford Co., Tryon, N. C., 5.9 cents; Federal Chemical Co., Chicago, 5.46 cents; Chicago Sanitary Products Co., Chicago, 8.5 cents; Murro Chemical Co., New York, five cents; Talc Products Manufacturing Corp., Brooklyn, 4.7 cents; Fitzpatrick Brothers Co., Chicago, 4.98 cents; Independence Chemical Co., Philadelphia, 6.8 cents and Marjo Products Co., Chicago, seven cents.

Pyrethrum Award to MGK

McLaughlin Gormley King Co., Minneapolis, received the award on an unspecified quantity of pyrethrum extract with a bid of \$4,400 in a recent opening for miscellaneous supplies by the Division of Purchase, Sales and Traffic of the U. S. Department of Agriculture, Washington, D. C.

Misc. POD Supply Awards

Miscellaneous awards announced in connection with recent openings for miscellaneous supplies by the Post Office Department, Washington, D. C., went to the following: Tennessee Soap Co., Memphis, 7.66 cents on 30,000 pounds of laundry soap; Imperial Products Co., Philadelphia, was low bidder on 15,000 pounds of scouring powder with a bid of 4.3 cents; Barton Chemical Co., Chicago, was low on 90,000 pounds of cleaner with a bid of 7.9 cents.

Other awards went to Kem Products Corp., Brooklyn, on 5,000 gallons of water emulsion type floor wax with a bid of 55 cents per gallon, f.o.b. Brooklyn; A.M.R. Chemical Co., Brooklyn, on 75 gallons of cleaner, was low with a bid of \$3.40 per gallon. Trio Chemical Works, Inc., Brooklyn, received the awards on 750

gallons of furniture polish, with a bid of 57 cents a gallon, and on 750 gallons of metal polish was low, bidding 52 cents a gallon, and on 70,000 pounds of toilet soap, Swift & Co., Chicago, was low with a bid of 12.32 cents on three-ounce cakes.

Carbon Tet. Bids, Award

The following bids were received on 1,400 gallons of carbon tetrachloride in a recent opening for miscellaneous supplies by the U. S. Army Arsenal at Letterkenny, Pa.: Imperial Products Co., Philadelphia, \$2.50; Carbona Products Co., Long Island City, N. Y., \$1,549, accepted; Octagon Process, Staten Island, N. Y., \$1.72; H. Kohnstamm & Co., New York, \$2.29; Pyrox Chemical Corp., Long Island City, N. Y., \$1.85; City Chemical Corp., New York, \$2.20; R. M. Hollingshead Corp., Camden, N. J., \$1.68; Rose Chemical Co., New York, \$2.27; B. R. Elk & Co., Garfield, N. J., \$2.40; R. I. Tone Laboratories, Newark, N. J., \$1.76; Standard Products Co., Philadelphia, \$1.85; Nagle Rubber & Chemical Corp., Brooklyn, \$2.42.

Weed Killer Award

Chipman Chemical Co., Bound Brook, N. J., submitted the low bid of 65.6 cents and received the award on 2,000 gallons of weed killer in a recent opening for miscellaneous supplies by the U. S. Army's Erie Ordnance Depot, O.

Soap Powder Bids

The following bids were received on 57,000 pounds of soap powder in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.: Stevens Soap Corp., Brooklyn, 5.9 cents a pound; Spazier Soap & Chemical Co., Santa Monica, Calif., 11 cents; Pioneer Soap Co., San Francisco, 6.4 cents; Swift & Co., Chicago, 6.68 cents; Unity Sanitary Supply Co., New York, nine cents; Murro Chemical Co., New York, seven cents; Stone

Soap Co., Detroit, 10 cents; Procter & Gamble Co., Cincinnati, 6.47 cents a pound or \$3.52 per case.

Dishwashing Comp. Award

Awards on 52,000 pounds of dishwashing compound in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C., went to: Washington Chemical Sales, Washington, D. C., with a bid of 8.5 cents per pound on item 51-C-1576-15, and Hanson-Van-Winkle-Manning Co., with a bid of 9.31 cents on item 51-C-1576-175.

Soft Soap Award to Harley

Harley Soap Co., Philadelphia, received the award on 9,300 gallons of soft soap with a bid of \$27,680 in a recent opening for miscellaneous supplies by the Armed Services Medical Procurement Agency, Brooklyn, N. Y.

Misc. V. A. Awards

Fitzpatrick Brothers, Chicago, received the award on 41,280 pounds of type II scouring powder in a recent opening for miscellaneous supplies by the Veterans Administration, Procurement Division, Washington, D. C. The Fitzpatrick bid was 6.71 cents on 40 14-ounce cans to the case.

In another Veterans Administration opening, Comfort Manufacturing Co., Chicago, received the award on two items of shaving cream. Item 1 called for 852 dozen tubes, on which Comfort submitted a low bid of 95 cents, and item 2, 120 dozen tubes, the low bid for which was 88 cents on a two ounce tube.

Fritzsche Honors Veterans

In recognition of their total of one hundred years of service to their firm, four employees of Fritzsche Brothers, Inc., New York, were feted and dined on October 2nd, at the New York Athletic Club. Those honored were Charles W. Schmied, maintenance department; Nils H. Johnson, compounding laboratory; Edward P. McDonough, order department; and Mrs. Theresa M. Spoerer, secretary. The company's executive officers, headed by F. H. Leonhardt, president, and all but the out-of-town active members of the Fritzsche Quarter of a Century Club participated.

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Stable, economical and versatile, the Mayas are invaluable in maintaining a given fragrance throughout a line of related products such as a cream, cologne, powder, rouge, soap, etc.

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NEW

TRADE MARKS

THE following trade-mark was published in the Oct. 2 issue of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, a fee of ten dollars must accompany each notice of opposition.

Old Dutch—This for soap powder. Filed July 31, 1946 by Cudahy Packing Co., Chicago. Claims use since June 20, 1946.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of \$25 must accompany each notice of opposition.

Blue Seal—This for preparation for cleaning and polishing hard finished surfaces. Filed Sept. 12, 1949 by Blue Seal Products, Kennett, Mo. Claims use since July 15, 1949.

Amazon—This for floor polishing wax. Filed Feb. 21, 1950 by Trio Chemical Works, Inc., Brooklyn. Claims use since Apr. 1, 1946.

Squir-ton—This for emulsified insecticide. Filed Nov. 18, 1950 by Stro-Kon Co., Whittier, Calif. Claims use since July 24, 1950.

Stro-Kon—This for emulsified insecticide. Filed Nov. 18, 1950 by Stro-Kon Co., Whittier, Calif. Claims use since July 24, 1950.

GyneSyx—This for antiseptic-germicidal preparation. Filed Jan. 25, 1951 by Beneficial Products, Inc., Birmingham, Mich. Claims use since Feb. 19, 1950.

Forest Pine—This for toilet soap. Filed Nov. 5, 1948 by Bathasweet Corp., New York. Claims use since 1941.

Drainkleen—This for drain pipe solvent compound. Filed June 4, 1949 by Metropolitan Refining Co., New York. Claims use since 1929.

Tryce—This for synthetic detergent for laundering purposes and other general household cleaning purposes. Filed July 12, 1949 by Armour and Co., Chicago. Claims use since May 16, 1949.

Fab—This for sudsing cleaner, cleanser and detergent. Filed July 29, 1949 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since Apr. 24, 1948.

New Ray—This for shampoos.

Filed May 24, 1950 by Raymond Laboratories, Inc., St. Paul. Claims use since Jan. 4, 1949.

Shrako—This for general purpose soapless detergent. Filed June 5, 1950 by Columbia Products Co., Columbus, O. Claims use since July 23, 1947.

Palmatic—This for detergent for laundry use. Filed June 29, 1950 by Chagrin Falls Chemicals, Inc., Chagrin Falls, O. Claims use since June 1, 1950.

Aquet—This for surface active agent for dilution into solutions for cleaning glassware and utensils. Filed Sept. 1, 1950 by Emil Greiner Co., New York. Claims use since Aug., 1948.

Varick—This for soap powder, household cleanser and dishwashing compound. Filed Dec. 18, 1950 by Francis H. Leggett & Co., New York. Claims use since 1930.

Miraluxe—This for wax containing liquid cleaner capable of waxing an automobile finish. Filed Nov. 9, 1948 by Churchey Products Co., Brockton, Mass. Claims use since Sept. 7, 1948.

Stepanol—This for lauryl sulfate. Filed Mar. 28, 1950 by Stepan Chemical Co., Chicago. Claims use since Nov. 9, 1949.

Zanzibar Carbon Ironol—This for cleaner and lubricant for flatwork ironers and presses. Filed Apr. 6, 1950 by B. Heller & Co., Chicago. Claims use since Aug. 25, 1949.

Aldeform—This for white disinfectant and preservative. Filed Apr. 17, 1950 by American Drug & Chemical Co., Minneapolis. Claims use since June 30, 1940.

Sprayway—This for room deodorizers and air sanitizers. Filed May 13, 1950 by Tru-Pine Co., Chicago. Claims use since July, 1949.

Cetylamine (Quamonium)—This for antiseptic and disinfecting agent for surface antiseptics. Filed Dec. 30, 1950 by Cetylite Industries, Inc., New York. Claims use since No. 28, 1950.

Diaphine—This for surface anesthetic agent possessing bactericidal and fungicidal properties. Filed Aug. 31, 1949 by Sahyun Laboratory, Santa Barbara, Calif. Claims use since May 3, 1949.

Ottasept—This for chemical composition having antiseptic, germicidal and fungicidal properties such as para chloro meta xylenol. Filed Sept. 27, 1950 by Ottawa Chemical Co., Toledo. Claims use since June 12, 1950.

Ster-Kleen—This for organic detergents compatible with quaternary ammonium compounds. Filed Aug. 5,

1949 by Klenzade Products, Inc., Beloit, Wis. Claims use since Sept. 1, 1947.

U. S. Sells Ferd. Muhlens

The controlling interest in Ferd. Muhlens, Inc., New York, manufacturer of "4711 White Rose Transparent Glycerine Soap" and other cosmetics and toiletries, held by the U. S. was sold to Raymond Lee and John Roosevelt of Lee Pharmacal Co., New York, at an opening Oct. 25 in the Office of Alien Property, New York. The government, by a vesting order issued during the war, has been in control of the entire 1,000 shares of capital stock of the company since 1942. It was taken over by the Alien Property Custodian because of its German ownership. In the sale of the stock undertaken, the government also disposed of the company's patents and trade marks.

P.R. Coconut Output Up

Production of coconut products in the Philippine Republic during the first six months of 1951 totaled an estimated 479,755 long tons in terms of copra, it was revealed recently by Merrill W. Abbey, agricultural attache of the American Embassy in Manila. The output for the first half of this year was 35 percent greater than in the comparable period a year ago, when the total was 355,526 tons.

Copra and coconut oil exports for the period were 346,953 and 34,002 long tons, respectively. Last year 230,084 tons of copra and 22,479 tons of coconut oil were exported by the Philippine Republic.

Urges Bond Buying

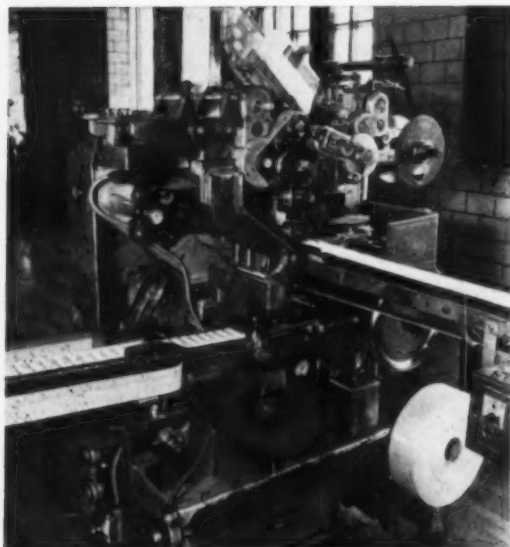
An address by Henry F. Elberfeld, vice-president and board member of Colgate-Palmolive-Peet Co., Jersey City, N. J., was the feature of a luncheon at the Hotel Plaza, Jersey City, recently. The affair was designed to promote the sale of U. S. defense bonds through the payroll deduction plan. Earl N. Felio, treasurer of Colgate-Palmolive-Peet Co. read Mr. Elberfeld's address, which was heard by over 40 representatives of industry and labor. Colgate-Palmolive-Peet Co. was host at the luncheon.

100 to 300 Soap Cakes Per Minute

Automatically Wrapped by Various Type

VAN BUREN WRAPPING MACHINES

either Sheet or Roll Feed



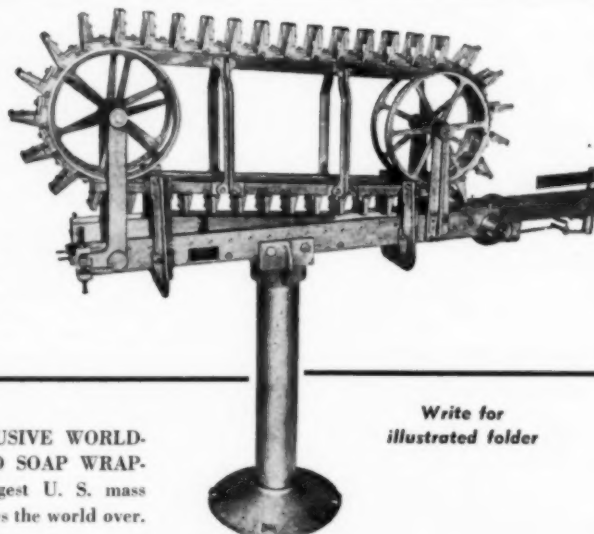
This installation picture shows **VAN BUREN SOAP WRAPPER, MODEL "S"**, which automatically wraps toilet and bath sized soap tablets at rates up to 200 cakes per minute, using cut inside and outside wrappers and glue sealed ends — *a perfect tighter wrap at high speed for increased production.*

Model "M-S" is a smaller, individually designed soap wrapper which automatically wraps up to 300 various hotel sized cakes per minute, with sheet or roll feed wrappers, sealed in the same manner.

Van Buren Automatic Track Type Cutter, Scrapless and Motorless.

Van Buren Company is the inventor and original patentee of the tractor type soap cutter.

This cutter is activated and automatically timed by extrusion of the soap bar from the plodder. It delivers to the press a continuous supply of perfectly cut cakes, without scrap or feathered edges. Intermediate cutting tables are eliminated. This cutting machine embodies many other important *exclusive* and *patented* features, particularly with regard to "quick change" for varying sizes.



Write for
illustrated folder

HOUCHIN MACHINERY CO., INC., IS THE EXCLUSIVE WORLD-WIDE DISTRIBUTOR OF VAN BUREN PATENTED SOAP WRAPPERS AND CUTTERS, which are used by the largest U. S. mass production soap manufacturers and other leading soaperies the world over.

HOUCHIN MACHINERY CO., INC.

Manufacturers of a complete line of soap making machinery for over three-quarters of a century
Sixth and Van Winkle Avenues Hawthorne, New Jersey, U. S. A.

PRODUCTION SECTION

Finishing of Toilet Soap

EVEN AFTER the early phases of soap manufacture, such as the mixing of fats, the boiling process, and the fitting of the soap kettle, are carried out correctly, considerable care is still required in the succeeding operations to produce a satisfactory finished toilet soap. A good basic soap should have a maximum of .05 per cent sodium hydroxide, about .4 per cent (with maximum allowance of .5 per cent) sodium chloride; and maximum unsaponified fat content below 1 per cent. The manufacturing phases completing the cake soap from the liquid soap are: cooling and drying; mixing the soap chips with additives and milling; plodding; and pressing.

A good drying operation is essential to a satisfactory finished soap. One case observed by the author of a non-homogeneous bar of toilet soap, which tended to rancidify on storage, traced back to defective drying.

There are two basic processes for drying basic soap: (1) in drying frames, and (2) automatically on conveyor belt dryers. The first method usually results in irregular drying of the chips, with hard dried chips in the top layers. These hard particles cannot be counter balanced by combining with a moister soap, although the extent of excessive drying may be partially offset by mixing the chips during drying. Uniformly dried soap chips may be obtained with correctly designed automatic belt dryers.

Belt driers may be used (1) on soap cooled in frames or in the cooling machine and then converted into chips; or (2) on soap cooled on chilling rolls.

Considerable care is required to produce a satisfactory finished toilet soap even after early phases of soap manufacture such as mixing of fats, boiling, fitting.

It is preferred to cool soap in frames, since this allows complete saponification and the formation of natural crystalline structure. Soap cooled by this method has better plasticity.

The dried soap chips should have a fatty acid content of about 76 percent. Free alkali should be present in the soap to avoid hydrolysis. The presence of free alkali also tends to prevent rancidity. The soap should contain no free glycerides or metallic soap. Additives may be incorporated in the basic soap to: (1) stabilize the soap; (2) protect against rancidity; (3) superfat the product; or (4) impart special properties. The additives are usually incorporated in the soap in the mixing machine.

Sodium thiosulfate (.2 to .3 percent) may be sprinkled over the dried chips as an aqueous solution, functioning as a stabilizing substance. Protective substances against rancidity include: sodium benzoate, 2-3 percent; borax, 3 percent; or tin chloride, .25 percent; these compounds are added to the dried chips in the mixing machine, or to the liquid soap in the feed hopper. Relatively new additives designed to protect against rancidity are p-oxybenzoic acid-methyl ester (.1 to .2 percent) or equal amounts of p-phenyl phenolate.

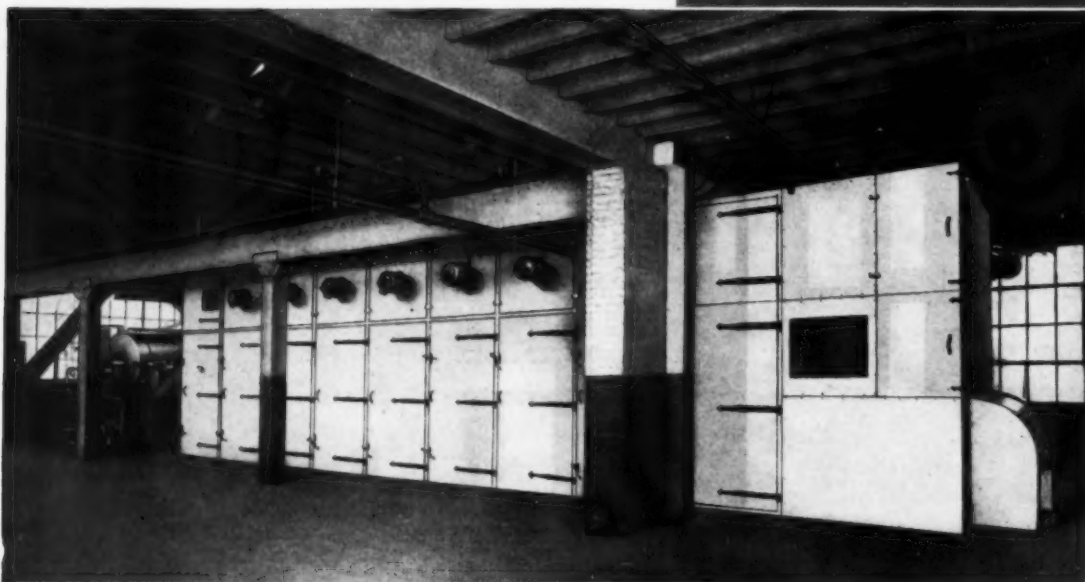
Superfatting agents added to the chips in the mixing machine make

the plodding easier and improve the homogeneity of the soap. In addition they perform their ultimate function of providing a high fat content in soaps designed for dry skin. The most widely used superfatting agent is lanolin (up to five per cent); although its specific odor requires specially compounded perfumes.

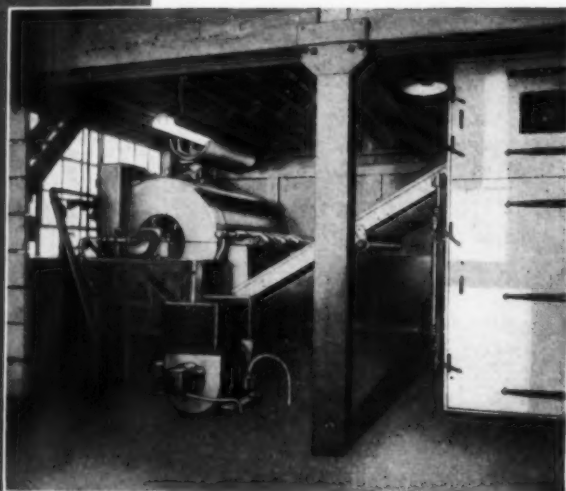
Another popular superfatting agent is "cereps" (one to three percent), which is neutral, has no odor, and is composed of mineral fats. Some modern superfatting substances are trolhatta oil (additions of one percent), a pale yellow fluid fatty ester, which also reduces the alkali action of soap; dodecyl and undecylamin.

Casein has been added to soap to improve foam and to impart a better plasticity to the soap roll. Two to five parts of a 20 percent casein paste per 100 parts of soap produce favorable results. Casein improves foam by increasing the emulsifying action. Castor oil, fatty acid, boric acid, etc., may be incorporated in casein pastes to neutralize excessive alkali contents. A casein paste may be made as follows: Allow 200 parts of alkali soluble casein to swell in 470 parts of cold water; to this add a hot solution of 20 parts of borax and 145 parts of water; and then five parts of triethanolamine; stir until solution is complete. Add 150 parts of lanolin and 10 parts

THE *NEW* SOAP CHIP DRYER *by* SARGENT



Accurate FEED CONTROL — *Perfect* CHIP THICKNESS CONTROL



FOR INCREASED PRODUCTION

SARGENT'S New Soap Chip Dryer has flexible feed control and accurate chip thickness control—with three variable speed drives, for the rolls, for the feed apron, for the dryer conveyor. It has many other new features all designed to speed production at low operating cost.

The installation illustrated is at Standard Soap Co., Camden, N. J. Production is 2000 lbs. tallow base laundry soap chips per hour, with intake moisture of 34% and leaving moisture of 8%. Harder drying soap averages 1600 lbs. per hour. Chip thickness of 10/1000 to 12/1000 is consistent and even across full width of chilling roll and feed apron conveyor.

Please write for full particulars.

C. G. SARGENT'S SONS CORPORATION
Graniteville, Massachusetts, U.S.A.



of benzoic acid to the warm mixture and stir until cold.

A soap designed for mechanics, etc., may be made by incorporating a mixture of solvents with the basic soap chips. These additives may include ethyl glycol, carbon tetrachloride, and terpineol. The soap will have an improved deterative action, without affecting the skin. Medicated soaps are made by including three to five per cent of a medicant such as sulfur, *b*-naphthol, potassium, iodine, menthol, Peru balsam, etc.

After mixing the additives with the soap chips, the mixture should be milled only enough to obtain a thorough homogeneity of the mass. A soap which is overmilled may cause trouble in transparency. In a well prepared soap, the ribbons taken from the cylinders of mill may be easily compressed in the hand and show a nice brilliancy of surface. A soap which is excessively dried or contains an excessive amount of electrolyte does not compress readily in the hand, and does not form a continuous roll in the plodder.

Since the soap becomes slightly heated on the cylinders of the mill, it should be cooled before plodding to avoid the formation of air bubbles. The average temperature may be about 20° C. Correct design of the plodding machine plays an important role in the manufacture of a satisfactory toilet soap. The soap in the plodding stage is pressed through a perforated disc. To obtain a smooth soap roll and good consistency, sufficient cooling of the cone is required. The soap is heated by the pressures required to press it through the discs, so that cooling water is necessary to maintain a correct temperature, preventing transparency of the soap roll and formation of streaks and air bubbles.

Modern discs are characterized by the fact that the perforations in the middle of the discs are smaller than at the edge, with the result that the soap comes out more quickly in the middle. By working with such new perforated discs a more homogeneous and uniformly compressed roll is obtained than with the older type of perforated disc. F. Milos *The Alchemist*

Silicate-Soap Viscosity

Viscosity measurements at 20° C. on mixtures of potassium soap with potassium silicate and potassium chloride in the range of 0 to 100 poises were made, using potassium coconut oil soap, potassium soybean oil soap and potassium linseed oil soap. It was found that all four silicate additives tested and the potassium chloride had a considerable effect on the viscosity of the potassium linseed oil and the soybean oil soap solutions, but almost no effect on the viscosities of potassium coconut oil soap solutions in the same concentration ranges. Alkaline silicates caused greater increases in viscosities than the siliceous silicates. An analysis of the wide difference between the effect of the additives on the coconut oil soap on one hand, and the soybean oil and linseed oil soaps on the other hand is explained partly by the high solubility of potassium coconut oil soap in the presence of $K_2O-3.3 SiO_2$. Robert W. Spencer. *J. Am. Oil Chemists' Soc.* 28, No. 10, 426-429 (1951).

Low Temperature Scouring

Soap-soda scouring of greasy wool is difficult below 40° C., since the removal of wool wax from the fibers is hindered by the high viscosity of the wax. The addition of a small amount of emulsified solvent to the detergent solution enables scouring to be accomplished at room temperature. The influence of each of a number of factors on the detergent efficiency of such an emulsion should be taken into consideration. W. W. Mansfield, *Austral. J. Appl. Science* 1, 330-347 (1950).

Detergent Effect on Trypsin

Studies on antiproteolytic substances indicated that the fibrinolytic activity of "Trypsin" (Armour, crystalline containing not more than 50 per cent magnesium sulfate) was considerably increased by the addition of the quaternary compounds. Plasmin (human, streptokinase, activated) showed

5, No. 8, 220-228, No. 9, 245-252 (1951).

an increase in activity in the presence of small concentrations of the compounds, while larger amounts were inhibiting in action. The quaternary surface active agents tested were cetyl pyridinium chloride ("Germidin," Binova, Ltd., Copenhagen) and lauryl benzyl dimethyl ammonium chloride ("Rodalon," Ferrosan, Ltd., Copenhagen). T. Astrup, N. Alkjaersig, *Nature* 168, No. 274, 565 (1951).

New Books

Organic Syntheses. Volume 31, R. S. Schreiber, editor. Published by John Wiley & Sons, Inc., New York. 122 pages, 6 x 9 inches, cloth binding, price \$2.75.

Satisfactory methods for the preparation of 42 organic chemicals are contained in this new addition to the series on organic syntheses.

Among the contents of this text are methods of preparation for: arylureas, benzofurazan oxide, coumalic acid, diiodohexane, dimethoxycinnamic acid, dinitroaniline, ethyl pyruvate, iodocyclohexane, laurone, nitroanthracene, phenyldichlorophosphine, syringic aldehyde, and thiolacetic acid.

* * *

Statistical Methods for Chemists by W. J. Youden. Published by John Wiley & Sons, Inc., New York. 126 pages, 6 x 9 inches, cloth binding, price \$3.00.

As indicated by the author, the book is written for those who make measurements and interpret experiments. The first chapter gives a brief summary of statistical methods, while the next few chapters are concerned with accuracy of measurements, tolerance, etc. Examples and interpretation of data are given. Discussions on the resolution of errors, statistics of the straight line, an analysis of variance, and arrangements for improving precision are included in the text.

* * *

Microbial Decomposition of Cellulose by Ralph G. H. Siu. Published by Reinhold Publishing Corp., New York. 530 pages, 6 x 9 inches, cloth binding, price \$10.00.

DRYMET*

THE ECONOMICAL DETERGENT SILICATE

Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

DRYSEQ*

THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O —making it an economical base material for compounding.

DRYORTH*

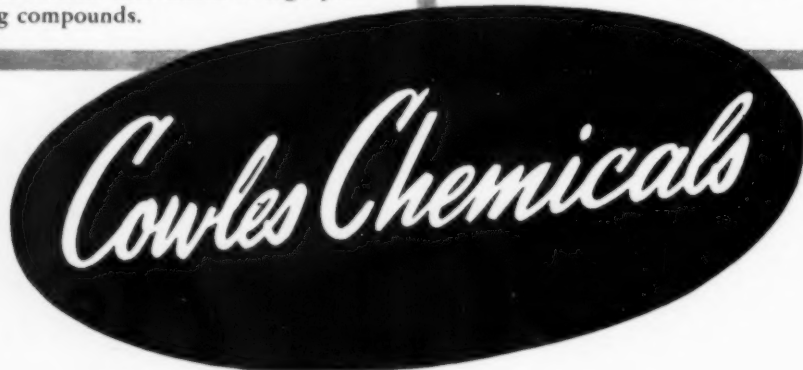
THE HEAVY-DUTY DETERGENT SILICATE

Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na_2O , which may also be used as an economical constituent of high pH cleaning compounds.

CRYSTAMET*

THE MEDIUM pH DETERGENT SILICATE

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.



*We'll be glad to send you our DRYMET
File Folder containing complete technical
information and suggested formulations.*

* REG. U. S. PAT. OFF.

COWLES CHEMICAL COMPANY

HEAVY CHEMICAL DEPARTMENT

• CLEVELAND 3, OHIO

The story of fungus and bacterial attack on cotton fabrics is contained in this text, with detailed discussion on prevention of microbiological damage by toxic inhibitors, mildewproofing, use of fungicides, etc. Effective chemicals and method of application are discussed.

The text contains 12 chapters divided into five main sections: Introduction, structure and properties of cotton fibers, causal organisms, mechanism of degradation and methods of prevention.

* * *

The Housefly. By L. S. West. Published by Comstock Publishing Co., Ithaca, N. Y. 584 pages, 6 x 9 inches, cloth binding, price \$7.50.

A complete study of the housefly is contained in this text, which includes a well balanced discussion of several phases of this subject, such as the morphology, physiology, behavior, life history, taxonomy, distribution, ecology, relation to disease, usefulness in the laboratory and in nature, techniques in the field, museum and laboratory, control measures, prevention, and bibliography. According to the author, the book is intended primarily for the use of public health officers, Army and Navy medical personnel, experiment station workers, college and university staff members, and students of animal biology. However, the discussions proceed in a clear and well defined manner, so that the text is readily understood by all intelligent readers who may be interested in natural history, sanitation or public health.

Control measures of the fly are discussed particularly in three chapters: Emergency Control; Planned Control; and New Insecticides. Environmental sanitation is stressed as one of the most important and effective means of controlling flies. Disposal of garbage, animal manure, and human waste, are among the measures discussed in planned control. The historical development of DDT and other insecticides, their use, application, and effectiveness in the control of flies, is included in the discussion on insecticides. The author points out,

Drum Cleaner Brochure

A new, six-page, two-color brochure on fast, low-cost drum cleaning was issued recently by Pangborn Corp., Hagerstown, Md. The folder, which contains five photographs, 11 line drawings and four plan and elevation drawings, explains how the company's "Rotoblast" unit cleans drums and covers thoroughly by throwing metallic abrasives against drum surfaces by centrifugal force. Two available "Rotoblast" machines are featured, one having a capacity of 70 drums per hour, the other a capacity of 140 drums per hour.

How machines are loaded and unloaded, safeguards for the operator, complete engineering specifications, and diagrams showing how drums are cleaned inside and out, are also given. Copies of the bulletin are available.

— • —

Oil Processing Brochure

A brochure describing its hydrogen type vegetable and animal oil processing plant was issued recently by Power-Gas Corp., Stockton-on-Tees, England. In addition to a brief discussion of hydrogenation, the booklet discusses the preparation of the catalyst, the hardening process, and refining. A questionnaire covering points to be considered in deciding upon a particular plant design is included, as is a table of cubic feet of electrolytic hydrogen required per ton of oil. There is also a schematic drawing of a typical plant.

— • —

Plant Housekeeping Booklet

Emphasizing that good "housekeeping" in any manufacturing plant is good business, the Office of Small Business of the National Production Authority, U. S. Department of Com-

merce, however, that although the new pesticides have shown much usefulness against flies, they do not replace, but supplement sanitary measures.

More than 175 illustrations are contained in the text, including detailed diagrammatic studies of various parts of the fly. A bibliography of more than 1100 references completes the volume.

merce, recently issued a two-page pamphlet which itemizes 69 points to be checked periodically to maintain plant cleanliness, reduce accidents and increase productive efficiency.

The bulletin, one of a series of defense production aids designed to help small manufacturers, points out that a clean, well-lighted and orderly plant generally has fewer accidents, better employee morale and a good production record.

Free copies of the booklet, "A Checklist for Small Plant Housekeeping" may be obtained from Printing Services, Department of Commerce, Washington 25, D. C. or from any field office of the Department.

— • —

New Package Imprinter

A new automatic package imprinting machine, the "Rolacoder #401," was announced recently by Adolph Gottscho, Inc., Hillside, N. J. The new unit is designed to fill the need for a compact, friction-powered production-line attachment that produces spot-registered imprints of code—dates, weights, sizes, and other supplementary information on small size cartons. It is specially engineered and constructed to perform efficiently over long periods of time on modern, high-speed production lines. It is also suitable for imprinting cans, canisters and bottles.

The "Rolacoder #401" imprints legends containing up to four lines of copy (occupying a maximum depth of one inch and a maximum length of five inches) on the top or side of cartons as they pass through a cartoner, or sealer, or along a chain or belt conveyor. It is said to make a single, accurately located imprint in any designated spot on cartons, the imprint size of which measures between 1 3/4 x 6 3/4 inches in the dimension parallel to the direction of package travel.

Normally the imprinter is preset at the factory for cartons of a specific size but, when desired, may be obtained with interchangeable cams permitting the user to modify machine action at will in order to imprint cartons of various sizes within the unit's maximum-minimum range. It is also

Right Combination

to reduce your costs
and improve the quality
of your products...



Use ULTRA'S ALKYL ARYL SULPHONATES

FOR EXCELLENT WETTING...GOOD DETERGENCY
...AND FINE FOAM STABILITY

SULFRAMIN® BUILT BEADS

30% alkyl aryl sulphonate combined with complex phosphates, CMC, alkalis and white dyestuff. Packed 130 pounds to the 55-gallon drum.

SULFRAMIN® AB-40 FLAKES

Excellent foam stability, especially at high pH. Very low in dust and odor. Outstanding wetting.

SULFRAMIN® AB-CONCENTRATE FLAKES

80-85% active organic material. For blending where high active is required in finished product. Density, .3.

SULFRAMIN® AB-40 POWDER

Excellent detergency. Light in color. Less than 1% moisture. Screened, not ground, hence low in fines.

SULFRAMIN® AB-CONCENTRATE POWDER

Density, .45-5. Easy to perfume due to low odor. Low in dust content. Excellent money value.

WRITE OR PHONE FOR DETAILS!

* Trademark Registered U. S. Patent Office



ULTRA CHEMICAL WORKS, INC.

HAWTHORNE, CALIF.

PATERSON, N. J.

JOLIET, ILL.

ONE OF THE BASIC MANUFACTURERS OF DETERGENTS IN AMERICA

furnished with mounts for installation in either a vertical or horizontal position to imprint from top or side of the line.

Air-drying Silicone

An air drying silicone may be formulated, using ethyl cellulose and an acrylate together with various D.C. silicone resins as basic ingredients. These silicones have the unusual properties of air drying rapidly. Their brittleness is overcome by incorporating 2.5 per cent dimethyl phthalate and 2.5 per cent diethyl phthalate. Films thus formed are tough and flexible. Acetyl peroxide solution in dimethyl phthalate is recommended as a catalyst for the polymerization of monomeric materials. Reports of the Overseas Research Reports Dept. through *Chemical Age* 65, No. 1673, 160 (1951).

Stamping Soap Cakes

In preparing the rough cake of soap for the press, it is important that the rough size meet adequate specifications, to avoid deformation. If the rough pieces are too different from the final shape of the soap cake, they will be very deformed in the press, and from this deformation, there is danger that the homogeneous structure of the roll will be affected to such a degree that the soap when used will show cracks.

The rough pieces of soap should be selected so that the highest part of the piece is first in contact with the lowest part of the lower or upper die or stamp, otherwise air cushions occur between the soap and the stamp. The easiest shape to press is the rectangular, smooth bar. Rough pieces for such cakes should be three to four millimeters narrower than the width of the finished cake, and either equal to the length of the prepared cake, or three to four millimeters longer.

Automatic presses produce 10-20,000 bars an hour, with four to eight cakes pressed at each move. Relatively simple shapes are pressed by the automatic presses, and it is advised the hand driven presses be used for the luxury, fancy shaped soaps. F. Milos, *The Alchemist* 5, No. 9, 247-252 (1951).

Monoglycerides in Industry

"Monoglycerides Finding Wider Uses in Industry" is the title of a reprint of an article that is now available from the Glyco Products Co., Inc., Brooklyn 2, N. Y. This describes monoglycerides of the fatty acids such as stearic, oleic, lauric, ricinoleic, etc. Methods of manufacture are discussed. The varying compositions and physical properties which are possible are outlined and a specifications chart to illustrate this is included.

The applications of the monoglycerides in the following industries are noted: insecticide, detergent, drug, cosmetic, emulsion, food, paper, textile, leather, rubber, paint, plastic, resin, ink, polish, lubricant, photographic, adhesive, dye. Many specific uses in these industries are given.

Prentiss Warfarin Book

A 16-page, two-color, fully-illustrated booklet describing Prentiss "Warfarin Concentrate" — the anti-coagulant rodenticide sold under the trade name, "Rax Powder" — has just been published by Prentiss Drug & Chemical Co., 110 William St., New York 7, N. Y., and is available upon request.

Prentiss warfarin concentrate is used for the preparation of ready-to-use baits and rodenticides. It has been noted for its action under all conditions in controlling rats and mice.

The new Prentiss warfarin booklet gives many of the facts about the rodenticide — from its discovery in the laboratories of the University

of Wisconsin, through its testing and to reception by consumers.

Its chemistry, killing action and relative slightness of risk to handlers are discussed. Also covered in the booklet are the 6,000,000 farm market, what country agents say about warfarin, suggested consumer selling prices, label instructions, examples of rodenticides containing warfarin, nation-wide publicity, the *Reader's Digest* article on warfarin by Paul de Kruif, how pest control operators, food sanitarians, public health officials and rodent control supervisors can use the product, questions and answers about warfarin rodenticides, the U. S. Public Health report on warfarin, and full instructions for baiting.

Antioxidant for Oils, Fats

A trisubstituted sterically hindered phenol, "Ionol," developed by the Shell Chemical Corp., San Francisco, Calif., is suggested as an antioxidant for organic materials, such as animal and vegetable oils and fats, mineral oils, rubber, etc.

Pennsalt . . .

(From Page 53)

chemicals department, chiefly bulk insecticides and weed killers to large users or blenders; the laundry and dry cleaning department—sours, bleaches, dry cleaning compounds, blues and other products—to commercial laundries and dry cleaners.

The special chemicals department handles metal cleaners, corrosion-resistant cements and paints, metal-treating compounds and maintenance cleaners. The B-K and household products department sells dairy sanitation products, insecticides for garden, homes and small farms, cleaning compounds and Pennsalt's first profit producer, lye.

Selling to virtually every industry in America, in addition to serving America's homes and farms, Pennsalt is distributing its products to some 13,000 direct buyers and an estimated 75,000 who purchase products through distributors.





something old...



something
new

Caustic Potash (KOH)

Solid fused, granular, flake
and broken—all 90%
Liquid clarified—45%
Special low chloride grade, iron
free—45 to 50% active liquid.
Isco American Selected Walnut

Carbonate of Potash (K_2CO_3)

liquid —47 to 48%
hydrated—83 to 85%
calcined —98 to 100%

- FERRIC CHLORIDE
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- MURIATE OF POTASH
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International Minerals and Chemical Corporation—an old name in the potash field—is newly embarked on an expansion program to supply a variety of potash products to the chemical industry.

International now manufactures and markets the Caustic Potash, Carbonate of Potash and other related chemicals made at Niagara Falls and bearing the Isco brand name—an old and well recognized by-word for quality and dependability.

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ANOTHER INTERNATIONAL PLANT TO SERVE INDUSTRY

By E. G. THOMSEN, Ph.D.

THE pollution of air through dust and fumes is a troublesome problem in many plants. To control or eliminate them is often an expensive and troublesome procedure. In many cases, however, the saving from such installations more than compensates for their initial cost. If air contamination is a localized condition as in a single plant or section of a factory, the elimination of dust and/or fumes results in better employee-employer relationships. On the other hand, if it becomes a neighborhood nuisance, it stirs up the tempers of nearby property owners and city officials. Such a situation can result in ordinances and court cases.

To cut into a company's budget to collect all dust, then, is equally as important as recovering only those particles that have a reuse value. The elimination of smoke or chemical fumes seldom results in the accumulation of any useful or valuable recovered material, but their prevention results in economies of a different sort at the source of the trouble.

The normal procedure to overcome air contamination is to check on its source. Smoke starts in the boiler room, fumes and dust have their origin in processing procedures. The control of smoke which, because it is highly visible, causes much complaint, is controlled quite easily. Frequently it is merely a question of better combustion. In installations under the direction of competent combustion engineers causes usually can be detected and rectified easily, resulting in economies that justify the cost of control installations.

Smoke fumes are not always a major problem. A good exhaust system that collects fumes and washes them out or burns them up is a common control procedure. Dust, on the other hand, is more troublesome.

Several methods are employed to get rid of dust. At times, instead of using

a single method for its elimination, it is advisable to combine one or more of these to gain the most efficient and economical result. The methods used involve electrical precipitation, deflec-



DR. THOMSEN

tion, retarding the speed at which dust is given off, knocking it out, washing it out, and filtration.

First of all, two general principles govern dust collection. The first is that an initial effort must be made to reduce the quantity at the source. This may often be done by some simple correction like tightening the apertures through which dust escapes or by installation of simple exhaust systems that take it away as it rises. The second precaution is to be certain that the system installed has sufficient capacity to handle the dust-laden air. I have seen cases, in smaller plants particularly, where inefficiency of dust removal was due entirely to the capacity of equipment being too small.

The electrical precipitation method for collecting dust and at times constituents of waste gases as well, is known as the Lodge-Cottrell Process. The system consists of two sets of electrodes of various shapes depending upon the conditions of its application. One of these carries high voltage that produces an electro-static field to ionize the particles. The other

electrode is grounded so that the charged particles collect upon it and may be collected. While small units of this type are available, the cost of installations is limited to large operations mainly in the heavy chemicals and mining operations fields. Some utility companies employ it for the control of fly ash from their steam boilers.

Dust control by deflecting the course of the air stream from grinders particularly has limited application. It is used mainly to remove coarser materials. The same statements are true in stopping down the velocity of the air flow by the use of small baffles built into air ducts to retard the speed of the air and practically knock out the dust which drops into a chute located at right angles and just below these baffles in the main air duct.

The collection of dust by the wet method is not too satisfactory. Hence it is utilized only in restricted cases. By this method, the dust laden air is forced through either a layer or spray of water or other liquid to remove or wash out the solid particles in it.

The procedure used most generally for arresting dust is the cyclone. It is not too efficient as only about 70% of the dust is stopped in the most efficient unit. At times several cyclones are connected. They are known as multicyclones. Cyclones whirl out the dust by conducting it through a conical shaped vessel that spins the air and slows it down gradually thereby causing the dust to fly against the outside wall in the cyclone and drop down along the sides into a collecting tank. Cyclones are used most generally because they are cheaper and simpler than other systems. In deciding upon this equipment it is well to realize that several small cyclone collectors are more efficient than one large one. It is also a good policy to use a dust house or filter type collector beyond the cyclone when removal of all the dust is desired.

The filter type dust collector is the most satisfactory for the type of products made by the readers of this column. With the newer types of cloth now available in the synthetic

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fiber field, the filter type dust collector is more desirable than ever. Various arrangements of the screening cloth are used. The usual arrangement consists of rectangular hollow frames or fins in a dust tight compartment or dust house. Round and oval bags of suitable size often in multiples are quite satisfactory. When frames are used the more efficient collectors have rapping devices that may be used to clean the cloth so the dust falls into the clean-out compartment. When the dust is to be recovered, it is collected in a hopper. Dust that is to be scrapped is often washed away. When bags are used as filters, it has been found that oval bags are more desirable than round ones for they are cleaned out more readily.

Dust collection is not as simple as it looks on the surface. For that reason no matter which type system is installed it is advisable to consult with an engineer experienced in the field.

Lighting Dusty Places

A PROPOS of what has just been written about the dust problem is the question of good light in dusty locations. Westinghouse Electric Co., New York, has two lamps that are suitable for such places. They make an 800 Watt lamp shaped like a seven inch television screen to which no dust particles will cling and also a 400 Watt fluorescent mercury vapor bulb that emits a much whiter light than previous types.

Synthetic Fiber Cloths

SYNTHETIC fiber dust collection bags and filter cloths are available from Wm. W. Stanley Co., 401 Broadway, New York 13, N. Y. All sizes fabricated from Vinyon, Orlon or Nylon to meet specific specifications may be had.

Cleaning Dairy Equipment

THE POLYCHEMICALS department of E. I. du Pont de Nemours & Co., Wilmington 98, Del., is promoting the use of its hydroxyacetic acid as a mild, safe cleaner for dairy equipment. The use of alkaline detergents, the department claims, is not effective for the removal of milkstone,

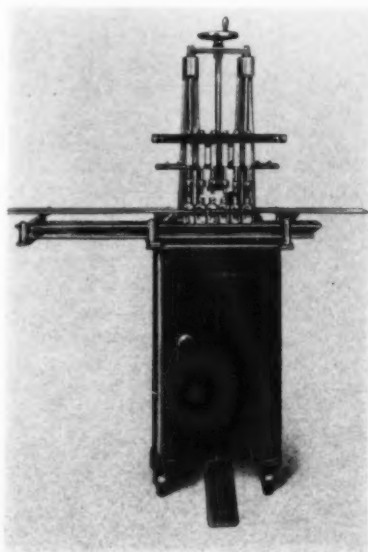
a troublesome, hard deposit on utensils used in dairies. Hydroxyacetic acid removes it effectively and, at the same time, retards the growth of bacteria on their surfaces. No white film, carry-over or odor is occasioned by its use. A technical booklet on polychemicals is available.

Kansas City Flood

UPON returning from the West Coast recently, I was driven around Kansas City by Bob Mueller, of Private Brands, Kansas City, Kan. I really wish I had never seen the catastrophe. Mueller's plant, which

New MRM Fillers

A series of four and six spout semi-automatic, vacuum fillers were announced recently by MRM Co., Brooklyn, to accommodate small manufacturers with moderate filling requirements or an auxiliary filler for companies not wishing to disturb a mass production line. These portable fillers occupy comparatively little floor space, being 1'10" x 3'0". They are easily moved, having ball bearing casters. Changeovers from fractions of ounces up to quart containers can be made easily. Capacities up to 40 per minute are obtainable on the six spout unit and up to 35 on the four spout model (based on water in fractional ounce containers). The new portable fillers do not require skilled operators or maintenance personnel.



deals mainly in private brand insecticides, was practically flooded out in a few hours. Much progress has been made, however, in a few weeks' time toward normal operations. How the Thompson-Hayward plant escaped is miraculous! The manufacturers of sanitary chemicals certainly did one grand job in making available their disease preventive preparations to help ward off a general epidemic. It will take years before the disastrous effects of the flood are obliterated.

Thermo-Plastic Tanks

MAURICE A. KNIGHT, Akron, O., promotes its "Pyroflex" constructed tanks for various uses. "Pyroflex" is a thermoplastic sheet lining which may be heat bonded to a tank shell. It is then tested and covered with acid proof brick laid in acid proof cement. The finished tank will withstand the action of any type or concentration of acid. The tanks are durable and may be easily repaired. The company's Bulletin No. 2B describes the construction of these tanks in detail.

Batch Mixer

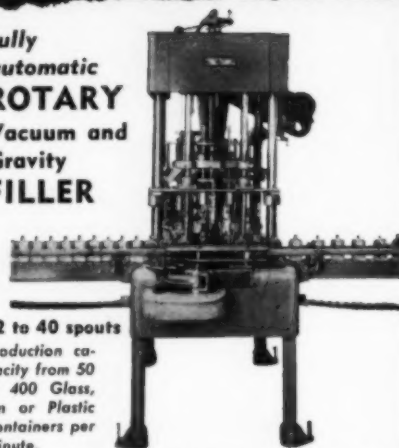
AN IDEAL mixer and blender for all types of dry powders, semiliquids, pastes and granular products is now available from George G. Rodgers, Inc., 2401 Third Ave., New York 51, N. Y. This mixer is ball bearing equipped and has a special type packing gland to prevent contamination of the batches. It is easy to clean, dust tight, leakproof and watertight. Catalog No. 43 describes this piece of equipment as well as the agitators, kettles, filters and conveyors built by this company.

Filling Scale

TO FILL bagged materials of up to 200 pounds rapidly within a plus or minus accuracy of one-tenth of a pound is possible with the Thayer Model 400 Filling Scale built by the Thayer Scale and Engineering Co., Rockland, Mass. It takes five seconds to fill and checkweigh a 100 pound bag accurately, the maker claims. The equipment easily handles powdered materials, flakes, pellets and similar substances.

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PRODUCTS AND PROCESSES

Brushless Shaving Cream

A satisfactory brushless shaving cream is made up as follows:

	parts
triethanolamine	4.0
stearic acid	8.0
sodium alginate	2.5
glycerine	3.0
almond perfume .....	.1
thymol .....	.1
perfume .....	.1
calsoline oil H.S. (ICI)	1.0
Empicol Z powder (Marchon)	3.0
water	to make 100

All the ingredients, except the stearic acid, are mixed together and dissolved. The mixture is heated to 60° C. and then the stearic acid stirred in at the same temperature. *Chemical Products* 14, No. 10, 353-354 (1951).

Detergent for Scouring

The amount of detergent actually used in both laboratory and mill scouring has been observed to exceed the theoretical amount needed. This has been explained by the formation of tiny water droplets inside of the oil droplets formed by the detergent. These water droplets are removed in the squeeze rolls. The presence of the tiny droplets is governed to a considerable extent by conditions in the scouring bowl and the condition of the wool entering it. There is some possibility of economy in detergent use through choosing the right conditions for wool entering the scouring bowl. *News Letter for Wool Textile Executives* 2, No. 8, (1951).

Aubepine for Soap Perfume

Aubepine (anisic aldehyde) is chemically a methyl ester of para-oxy benzaldehyde ($C_8H_8O_2$), and synthesizes the fragrance of hawthorne. It is used as a primary ingredient of soap perfumes, as indicated in the formula below:

	parts
aubepine	20.2
lavender oil	25.0
linolee oil	25.0

bergamot	10.2
methyl naphthyl ketone	7.1
cinnamon oil	7.1
musk ambrette	3.2
coumarin	2.2

Normally, eight ounces of perfume should be incorporated in one hundred pounds of neat soap to insure adequate and lasting scent.

Aubepine is used also as a blending agent for soap perfumes in proportions varying from two to five per cent. Another application is as a modifier of various compositions. T. Raiemele, *Perfumery & Essential Oil Record* 42, No. 6, 197-198 (1951).

Algenic Detergent Jelly

A new formulation for a detergent jelly is based on an algenic ester, which is formed by esterifying the carboxylic groups of algenic acid (new product of Alginate Industries, Ltd., England). The detergent contains ten parts of the algenic ester; 50 parts of "Teepol 530"; 20 parts of glycerine; and 30 parts of water.

"Teepol 530," glycerine and water are mixed, making sure that the glycerine does not settle to the bottom. The ester is stirred in slowly, avoiding the inclusion of air; and the whole heated on a steam bath for 30 minutes. The mixture is then allowed to cool. R. W. Moncrieff, *Perfumery & Essential Oil Record*, 42, No. 8, 261 (1951).

New Surfactant Use

A new method of oil recovery involving the use of a wetting agent and a quaternary ammonium compound, and the formation of a company to introduce it in Texas, New Mexico, Louisiana, Oklahoma and Arkansas, were announced recently by Armour & Co., Chicago. A contract has been signed by Armour and Oil Recovery Chemicals of Austin, Tex. for the introduction of the method which is based on the use of "Ethomid HT/60" as the surface active agent to increase the ease with which water

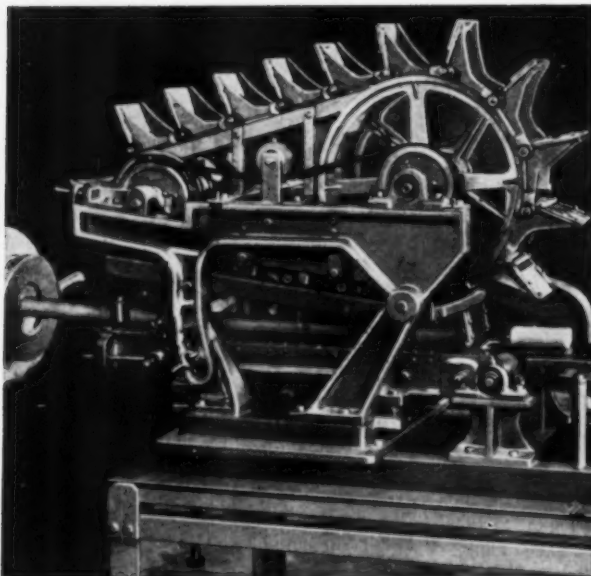
flows through the sand. Also employed is a quaternary ammonium compound, "Arquad 2C," made by Armour which acts to prevent corrosion of the water pipe and equipment and also functions as a bactericide. Frequently bacteria form when the water is pumped in, and block the sand pores. It is estimated that a one percent increase in recovery of oil from American wells will result from the use of the chemicals. There is a saving in expense, too, because the operation works with established oil fields and the high cost of developing new fields may be avoided. Both chemicals, which are manufactured at the Armour plant in McCook, Ill., opened in 1949, are effective in small quantities. As little as five parts per million parts of water are effective.

G-11 Effect on Wounds

Studies of the effect of hexachlorophene on wounds and burned surfaces indicate that the presence of two per cent hexachlorophene in bar soap exerts no influence on the amount of tissue reaction. Liquid soap containing alcohol showed a more marked tissue reaction, but was more effective against pathogens. Hexachlorophene soap is preferred to tincture of green soap for washing wounds; its use does not delay wound healing. *Arch. Surg.* 62, 895-902 (1951).

Alkalis in Glass Washing

Studies of the corrosive action of sodium hydroxide solutions on glass surfaces indicated that the presence of sodium aluminate and/or sodium zincate decreases corrosion, and protects the glass. The concentration of sodium hydroxide and temperature are important factors in the extent of corrosion. A 30 degree rise in temperature triples the corrosive effect in the bottle washing range. When sodium phosphate is used to replace sodium hydroxide, it increases the corrosive effect. Sodium carbonate and sodium silicate showed very little effect. Sodium pyrophosphate in 10 to 20 per cent of the total sodium hydroxide reduces corrosion. *Proc. Am. Soc. Brewing Chemists* 1950, 83-100 (1951).



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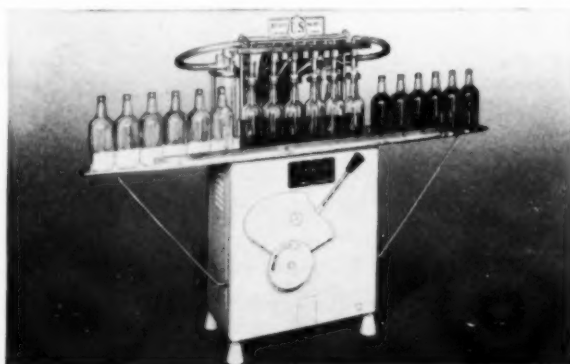
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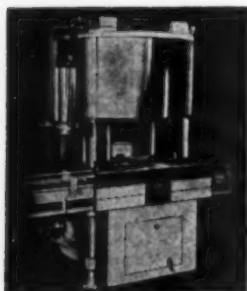
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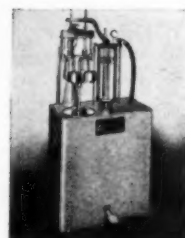
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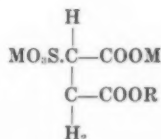
The information below is furnished
by patent law offices of

LANCASTER, ALLWINE & ROMMEL

402 Bowen Building
Washington 5, D. C.

The data listed below is only a brief review of recently issued pertinent patents obtained by various U. S. Patent Office registered attorneys for manufacturers and/or inventors. Complete copies may be obtained direct from Lancaster, Allwine & Rommel by sending 50¢ for each copy desired. \$1.00 for Canada. They will be pleased to give you free preliminary patent advice.

No. 2,562,154. Wetting and Detergent Composition, patented by Emil A. Vitalis, Springdale, Conn., assignor to American Cyanamid Company, New York, N. Y., a corporation of Maine. A wetting and detergent composition is covered comprising essentially a surface active material which is a monoalkyl sulfosuccinate having the formula



in which M is a member of the group consisting of alkali metal and ammonium radicals and both M's are the same, and R is an alkyl radical of from 12 to 18 carbon atoms, and a water-soluble lithium salt capable of increasing the water-solubility of the monoalkyl sulfosuccinate, said water-soluble lithium salt being present in an amount within a minimum range of from 0.25 mol to 3.0 mols and a maximum amount of 10 mols for each mol of the sulfosuccinate.

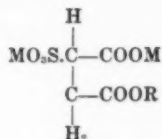
No. 2,561,209. Hydrogenated Dicyclopentadiene Insecticide, patented by Allen R. Kittleson, Cranford, and Louis A. Mikeska, Westfield, N. J., assignors to Standard Oil Development Company, a corporation of Delaware. An insecticidal composition is covered comprising a polychloro tetrahydrodicyclopentadiene containing from 50 to 75% by weight of chlorine, said product being obtained by completely hydrogenating dicyclopentadiene in the presence of a hydrogenation catalyst, followed by chlorinating the hydrogenated product with

elemental chlorine to substitute chlorine atoms for hydrogen atoms to the indicated chlorine range in the presence of ultra-violet light at a temperature in the range of 0° to 100° C., admixed with a dispersing agent which lowers the surface tension of water and thereby promotes aqueous colloidal emulsions of the polychloro tetrahydrodicyclopentadiene.

No. 2,562,870. Fumigation Process, patented by Emily M. Owen, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N. Y., a corporation of Delaware. The patent covers a process for destroying pests comprising evaporating in the air surrounding the pests a compound selected from the group consisting of formaldehyde bis (2-chloro-ethyl) acetal and acetaldehyde bis(2-chloro-ethyl) acetal.

No. 2,568,737. Reverse Detergents, patented by Willard H. Kirkpatrick, Sugar Land, Tex., and Doyné L. Wilson, Bellflower, Calif., assignors to Visco Products Company, Houston, Tex., a corporation of Delaware. The patent covers the method of conditioning surfaces for use under conditions such that traces of water constitute a contaminant which comprises rinsing the surfaces with a non-aqueous rinse comprising essentially a non-aqueous hydrophobic organic solvent in which is dissolved an oil soluble amine salt of a petroleum diolefin polymer condensed with an alkylated polycyclic sulfonic acid.

No. 2,562,155. Wetting and Detergent Composition, patented by Emil A. Vitalis, Springdale, Conn., assignor to American Cyanamid Company, New York, N. Y., a corporation of Maine. The patent describes a wetting and detergent composition comprising essentially a surface active material which is a monoalkyl sulfosuccinate having the formula



in which M is a member of the group consisting of alkali metal and ammonium radicals and both M's are the same, and R is an alkyl radical of from 12 to 18 carbon atoms, and a member of the group consisting of water-soluble magnesium and beryllium salts which are capable of increasing the water solubility of the

monoalkyl sulfosuccinate, said salt being present in an amount the minimum range of which is from 0.25 mol to 1.5 mols and the maximum amount of 10 mols for each mol of the sulfosuccinate.

No. 2,568,334. Method of Making a Synthetic Detergent Composition, patented by Eugene F. Hill, Detroit, Clifton E. Smith, Allen Park, and Thomas H. Vaughn, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan. The method of making a synthetic detergent composition is patented, comprising the steps of preparing a one—10% by weight water solution of sodium carboxymethylcellulose, adding sodium alkyl benzene sulfonate, whose alkyl group is derived from a petroleum hydrocarbon fraction boiling in the range of 150—300° C., thereto in the proportion of 2.5—100 parts to one part by weight, solids basis, of said sodium carboxymethylcellulose, heating the resultant mixture to approximately 90° C. and agitating, and then drying the resultant solution to solid form.

No. 2,567,200. Insect Repellent, patented by Marshall Gates, Bryn Mawr, Pa., assignor to the United States of America as represented by the Secretary of the Army. The patent describes an insect-repellent fabric comprising fabric impregnated with the dimethyl ether of pyrogallol.

No. 2,567,999. Process for Making a Detergent Composition, patented by Juan M. Guastavino, Buenos Aires, Argentina. A process of making a detergent composition for use on the human skin is described which comprises, reacting 5 to 12 parts by weight of 10% ammonium hydroxide and 15 to 25 parts by weight of oleic acid with continuous agitation in the presence of 100 to 120 parts by weight of a petroleum hydrocarbon fraction having a boiling range of 130 to 190° C., whereby to form an ammonium oleate-containing mass, adding to said mass 4 to 6 parts by weight of a 20% aqueous sodium hydroxide solution, and subsequently adding 10 to 20 parts by weight of water and 1 to 3 parts by weight of glycerine and continuing agitation until the composition acquires a gel-like consistency.

No. 2,566,359. Continuous Saponification of Fats, patented by Ronald Vincent Owen, Sale, England, assignor to Lever Brothers Company, Cambridge, Mass., a corporation of Maine. The patent covers a continuous process of saponifying fat which comprises continuously and rapidly mixing a continuous stream of liquid fat with a continuous stream of saponifying agent to emulsify intimately and substantially instantaneously the fat and saponifying agent in said streams and

(Turn to Page 98)

They discovered

In the ninth century, the soap-makers of Marseilles in France discovered how to make hard soap by using the soda from seaweed ashes instead of the potash from beachwood ashes as the alkali.



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By John W. McCutcheon

AS LONG as fats are saponified or split to make soaps, syndets or other derivatives, glycerine and its recovery will play an important role. Recent utilization of ion exchange methods for the recovery of this important soap by-product has again focused attention on this subject. The type of questions often asked the writer indicates that there is very often a great lack of understanding of this subject. For example, do ion exchange methods require pre-treatment of the lyes? Should distillation procedure be designed to remove glycols? How far does glycerine recovery depend on soap making technique?

When fat is saponified with an alkali, as in a soap kettle or reaction chamber of a continuous process, the resulting lye contains large quantities of salt, usually 12-14 percent, which was used to grain out the soap and permit the lye to separate. In treating these lyes, the object is not to remove this salt, a task economically unsound at this point, but to remove suspended matter, soluble organic acids and coloring matter so that the quality of the resulting crude will be high. This is usually done by adding a coagulant such as ferric chloride or aluminum sulphate and filtering at controlled pH values. Salt is not removed. A ton of such treated lyes will contain generally anywhere from 100 to 300 pounds of glycerine and 250-300 pounds of salt. Ion exchange methods are not economically applicable at this stage.

The glycerine is concentrated under vacuum in evaporators equipped with salt boxes. The concentration may be carried out in one step from lye to 80 percent crude or in two steps from lye to semi-crude glycerine, containing about 40-45 percent glycerine and from semi-crude to crude. In the

last procedure little salt drops out in the first step and for this reason it is a convenient method to employ for certain types of equipment. The first



MR. McCUTCHEON

effect evaporator of a double effect, for example, does not need a salt box as long as the concentration there is kept low. 10,000 pounds of an eight percent glycerine lye containing 14 percent salt for example will contain 800 pounds of glycerine and 1400 pounds of salt. If 20 pounds of lye are lost in the press cake during treatment there remain 799 pounds of glycerine and 1397 pounds of salt, allowing 100 pounds of salt to remain in the finished crude and 1½ percent of glycerine in the 1297 remaining pounds of recovered salt. The final glycerine becomes 780 pounds representing roughly 975 pounds of 80 percent crude, analyzing as follows:

	per cent
Glycerine	80.0
Salt	10.2
Organic Residue	1.6
Water	8.2
	100.0

In this example approximately 0.1 percent of the glycerine is lost in

treating. The 2.4 percent left in salt is not considered a loss, since it is re-circulated. However, other losses do occur, which in order of importance are as follows:

A Entrainment losses,—

- (1) *Due to plant design.* Usually very low at 0.1 percent or less.
- (2) *Due to plant operation—* such as improper breaking of vacuum on salt boxes; uneven vacuum; foaming lyes, due to poor treatment, and over concentration, such as making an 86 percent crude. Losses may be quite variable and often large in this category.

B Treatment losses.

- (1) As given above. Usually below 0.1 percent.

C Transfer losses.

- (1) Leaking pumps and tanks, tank overflows to sewer, defective tubes in evaporator, etc.

Even under good conditions of operation a loss of 0.75 to 1.25 percent may be expected in treating and evaporating. The greatest single loss to this point, however, is a known loss and occurs in the soap boiling operation itself. Glycerine left in soap of 0.7 per cent (kettle soap basis) represents a known glycerol loss of 9.7 percent while 0.5 percent represents a loss of only 6.9 percent.

Crude glycerine contains only about 10 percent salt and is capable of economic recovery by ion exchange. For this purpose the crude is diluted to increase ion exchange efficiency, treated and re-concentrated to refined glycerine. The resins used in the ion exchange process will take out just so much salt per cubic foot of resin and will stand just so many regenerations.

Thus, if 50 cubic feet of resins costing \$3,000 remove 100 pounds of salt, coloring matter and impurities daily from 10,000 pounds of diluted crude glycerine containing 1,000 pounds of glycerol, and require renewal after 300 generations; then the cost of resin equals one cent per pound. If the salt is present to the extent of say 25 pounds per 1,000

how to increase detergency . . .



VERSENE—INCREASES DETERGENCY

When your soap products or compounds, synthetic or otherwise, need greater detergency in either hard or soft water it's time to investigate the Versenes. These powerful organic complexing agents (known as the sodium salts of ethylene diamine tetra acetic acid and other polyamino acids) can help you in more ways than one. Available in liquid or powdered form, they are completely stable at all temperatures and pH's.

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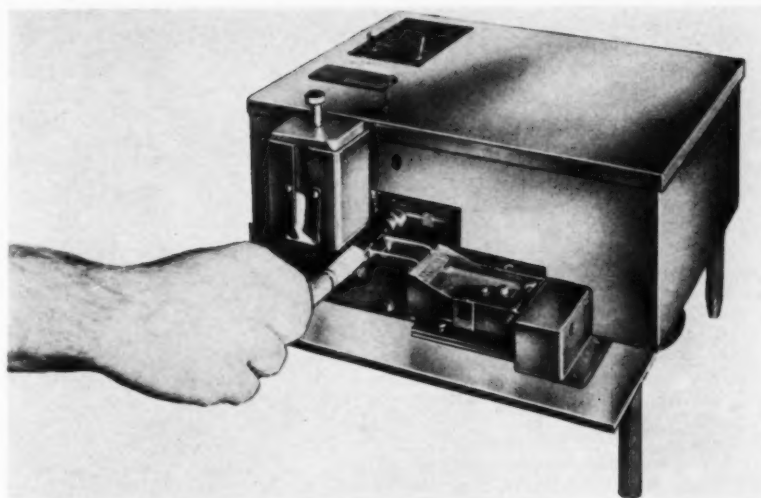
pounds of glycerine (as for a sweet water) the amount of resin required may be either cut to 12½ cubic feet or the regenerations made only once in four days, etc. In any case the life of the resin would be lengthened in proportion indicating the relation of resin cost to weight of salt removed. In case one, there must be added the cost of plant operation, chemicals for regeneration such as sulphuric acid and caustic soda, and a small loss of glycerine caused by the daily flush out of the ion exchange cells during regeneration. This may amount to a loss approaching 0.5 percent but could be lower at the expense of additional water to evaporate in the concentrator. To these costs must be added wages for direct and indirect labor and plant amortization.

The cost of recovery by distillation involves a substantial loss of glycerine in foots amounting to approximately 35 percent of the salt content or about 3.5 percent glycerol. Entrainment loss is generally negligible. To this must be added the cost of repairs and maintenance, amortization of plant, services, and direct and indirect labor. On the basis of a 300-500 pound per hour recovery the costs of the above methods are estimated in cents per pound as follows:

	Conventional Still	Ion Exchange
Amortization of plant (10 years)	0.16	.20
Resin replacement cost		1.00
Loss	2.15	0.27
Direct labor	0.50	0.45
Indirect labor and overhead	1.00	0.90
Services	0.24	0.19
Total	4.05	3.01

Wide variations exist within the above structures and it is doubtful whether an ion exchange plant could be justified in cases where conventional stills are already in place. In all other cases, however, the matter should be given considerable thought.

THE PRESENT status of synthetic detergents in shampoos is giving a considerable headache to manufacturers. The Food & Drug Administration is making a quiet investigation of what types may be harmful to the eyes, but no conclusions are available



New Potdevin collapsible tube labeler

at the present time. The offending products appear to be those combining non-ionic and quaternary ammonium germicides although this is by no means clear cut. Directions on the label cautioning against getting the shampoo in the eyes, plus keeping the selection of products to commonly used and well tested bases seems to be the only safe course at the present moment.

New Potdevin Labeler

A new labeling machine that applies 32 labels per minute to col-

lapsible tubes was announced recently by Potdevin Machine Co., Brooklyn. The new unit automatically forms the label and ejects it directly on the tube. The adhesive used is a resin hot melt kept at the right temperature by a thermostatically controlled glue pot. The glue pot does not require daily cleaning. The adhesive can remain in the tank over night. Machines are made for ⅛, ¼, ½ and one ounce tube sizes. Completely self-contained except for vacuum pump line for label pick-up, the hopper holds 500 labels.

Featuring compactness, the new

Colorimeter Booklet

A bulletin (No. 495) on its new interference-filter colorimeters for the measurement of the color of vegetable oils was announced recently by Photovolt Corp., New York.

Syn. Organic Chem. Data

The United States Tariff Commission released on Oct. 12, its annual report on the production and sales in 1950 of synthetic organic chemicals. Copies of the report, "Synthetic Organic Chemicals, United States Production and Sales, 1950" (Report No. 173, Second Series), may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 45 cents a copy.

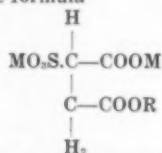
The report gives statistics on the production and sales of more than 6,000 individual items, and is based on data supplied by more than 570 companies. Also included are statistics on United States imports of products entering during 1950 under paragraphs 27 and 28 of the Tariff Act of 1930, covering coal-tar intermediates, perfume materials, dyes, etc. The report also gives statistics on the number of research workers employed in the industry, their average salaries, and the net and gross research expenditures.

Patents

(From Page 93)

form a continuous stream of emulsified fat and saponifying agent, the proportion of saponifying agent in relation to the proportion of fat in said initial streams being up to about the amount stoichiometrically required to saponify completely the fat in said stream and the temperatures of said initial streams of fat and saponifying agent being adjusted to give the continuous stream of emulsified materials an initial temperature below the boiling point; continuously introducing said stream of emulsified materials into a quiescent incubation zone containing an emulsion of unsaponified fat and saponifying agent, and self-saponified fat, wherein the proportion of self-saponified fat to unsaponified fat and saponifying agent increases toward the surface of the contents in the incubation zone and the temperature increases gradually from below the boiling point at the bottom to approach the boiling point of the contents at the surface, the freshly introduced stream of emulsified fat and saponifying agent falling to the bottom of the incubation zone, reacting exothermically to saponify at least a major portion of said fat, and rising gradually and continuously to form a surface layer of emulsion wherein up to 100% of the fat is in a self-saponified state, the balance of the fat being unsaponified and occluded in said layer together with any unreacted saponifying agent, the rate of entry of the continuous stream of emulsified materials being adjusted to the volume of the quiescent incubation zone to permit undisturbed self-saponification of at least the major portion of the fat in said incubation zone; and continuously withdrawing from the surface of the contents in the quiescent incubation zone, by overflow, a thin stream of said surface layer.

No. 2,567,159. Wetting and Detergent Composition, patented by Emil A. Vitalis, Springdale, Conn., assignor to American Cyanamid Company, New York, N. Y., a corporation of Maine. Patent is a wetting and detergent composition comprising essentially a surface active material which is a monoalkyl sulfosuccinate having the formula



in which M is a member of the group consisting of alkali metal and ammonium radicals and both M's are the same, and R is an alkyl radical of from 12 to 18 carbon atoms, and a water-soluble inorganic chromium salt which

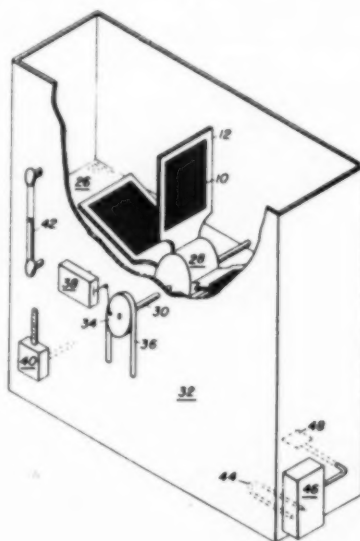
is capable of increasing the water solubility of the monoalkyl sulfosuccinate, said chromium salt being present in an amount the minimum range of which is from 0.25 mol to 1 mol and the maximum amount is 10 mols for each mol of the sulfosuccinate.

No. 2,567,199. Insect Repellent, patented by Marshall Gates, Bryn Mawr, Pa., assignor to the United States of America as represented by the Secretary of the Army. An insect repellent composition is patented comprising cyclohexyl phenyl ketone in a non-gaseous inert organic carrier.

No. 2,564,249. Fungicidal Compositions Containing Alkylcyclohexylmethylpyridine, patented by Francis E. Cislak, Indianapolis, Ind. A fungicidal composition is described comprising an organic solvent and an alkylcyclohexylmethylpyridine.

No. 2,564,663. Insect Repellents, patented by Paul D. Bartlett, Weston, and Sidney D. Ross, North Adams, Mass., assignors to the United States of America as represented by the Secretary of the Army. The patent covers an insect-repellent composition comprising in an inert non-gaseous organic carrier an ester of furylacrylic acid and of a saturated aliphatic alcohol having 4 carbon atoms in its molecule.

No. 2,568,707. Detergent Testing Machine, patented by Rubin Bernstein, Philadelphia, Pa. The patent covers a testing machine comprising a container adapted to contain a detergent in association with a liquid, rotatable means in said container, and spaced frames each having a tongue portion attached to said rotatable means and extending outwardly therefrom, each frame being adapted to hold a piece of fabric with a specific area thereof exposed constantly.



No. 2,567,645. Process of Producing a Detergent Composition, patented by Jozef Limburg, Heerde, Netherlands, assignor to Shell Development Company, San Francisco, Calif., a corporation of Delaware. The patent describes a process of producing a detergent which comprises intimately mixing an aqueous solution of a water-soluble salt of an alkyl sulfuric acid ester having 10 to 25 carbon atoms per molecule with a fatty compound of the group consisting of soap-forming higher fatty acids and glycerides thereof in an amount equivalent to a weight ratio of fatty acid to said alkyl sulfate salt of 5:100 to 50:50, adding to the mixture a basic compound, the soap of which with the fatty acid of said fatty compound is water-soluble, in an amount of from the equivalent of about 5% by weight of said soap based upon the total amount of said soap and said alkyl sulfate salt to the substantially stoichiometric equivalent of the fatty acid and maintaining the mixture at saponification temperature to effect saponification.

No. 2,563,839. Process and Apparatus for Manufacturing Inlaid Soap and the Like, patented by Penrose R. Hoopes, Philadelphia, Pa., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J., a corporation of Delaware. Apparatus for making an inlaid product of soap or a like solid plastic substance is described comprising a hollow die member shaped to define a closed outline letter or figure, means for forcing said hollow die member into a body of said substance to form in a surface of said body a deep closed outline cavity corresponding to said die member, means for withdrawing said die member from said body, and means comprising an element relatively movable with respect to said hollow die member surrounded by said hollow die member for firmly backing said surface all along the cavity edges within said closed outline during said withdrawal to retain said substance within said closed outline integral with said body.

No. 2,567,409. High Molecular Weight Fatty Acids, patented by Walter Russell Trent, North Arlington, N. J., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J., a corporation of Delaware. A method of stabilizing fatty acids is patented which comprises treating fatty acids containing minor amounts of polyolefinic compounds at elevated temperature with an acid anhydride having an alpha-beta-enal group in sufficient amount to react with said polyolefinic compounds and in the presence of a catalyst for said reaction, and terminating the treatment when said polyolefinic compounds have reacted with said anhydride and before a substantial amount of monoolefinic acids have reacted therewith.

SANITARY PRODUCTS

SECTION

Insecticides • Disinfectants • Moth Products
Floor Products • Polishes • Chemical Specialties

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(50% Olive Oil Base)
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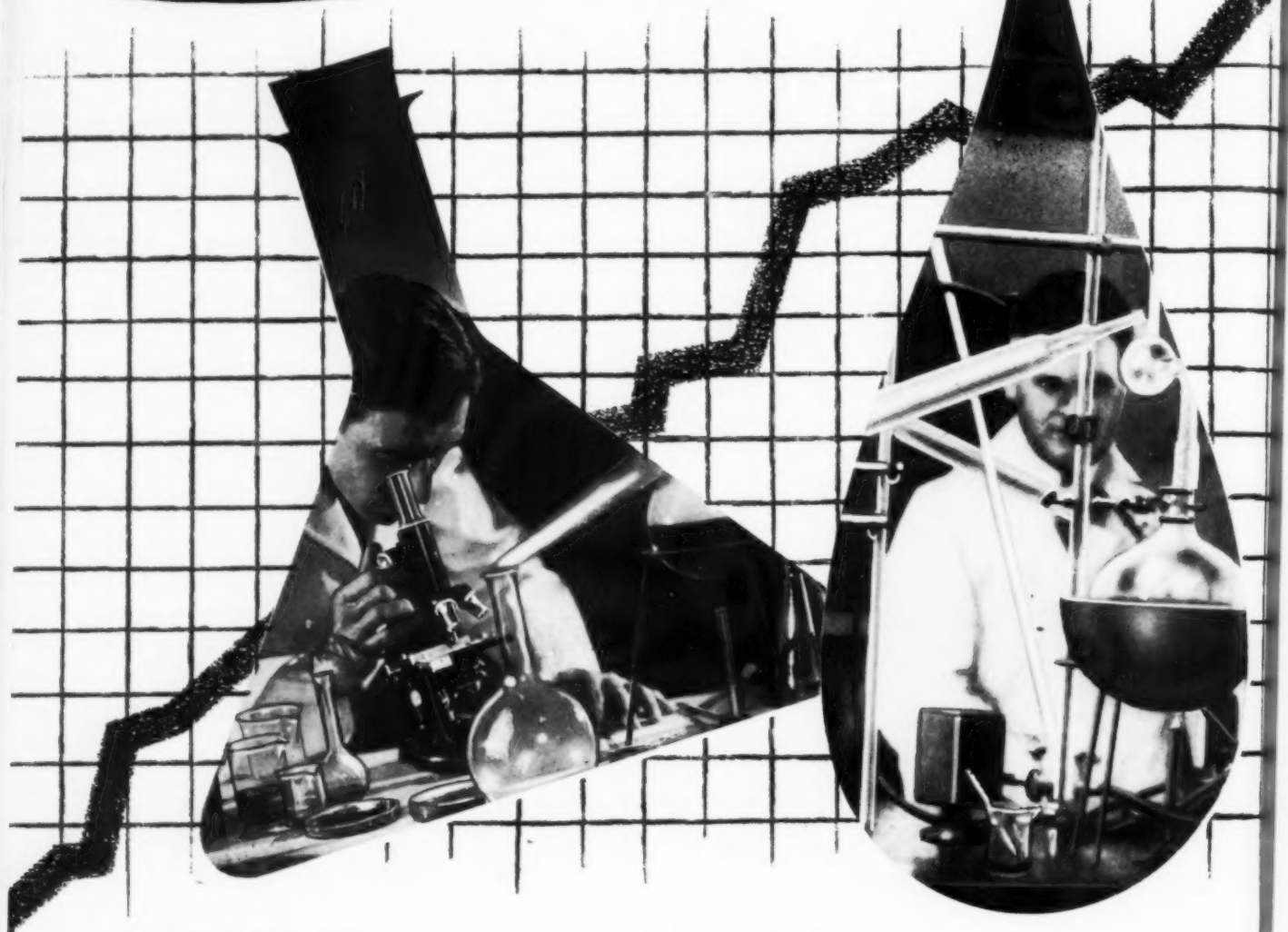
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*for your
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Here are the highlights of the program:

PUBLIC HEALTH OFFICIALS, SCIENTISTS and SANITATION SPECIALISTS in the food industry and allied fields will see ads describing the advantages of Pyrenone for insect control all along the food production line. These ads will appear in *Journal of Milk and Food Technology* and *Modern Sanitation*.

COUNTY AGENTS, EXTENSION AND OTHER AGRICULTURAL LEADERS will learn about the applications and advantages of Pyrenone through *County Agents Directory*, *Agricultural Leaders' Digest* and *Better Farming Methods*.

BUYERS AND DISTRIBUTORS OF MILK will read about the advantages of using Pyrenone for fly control in the production and distribution of clean milk from farm to finished product in *Milk Dealer* magazine.

300,000 LEADING DAIRYMEN across the nation will be covered in the Pyrenone ads in *Hoard's Dairyman*.

IN ADDITION, *Pyrenone Bulletin* newsletters will be mailed to many of the groups mentioned above, and other direct-by-mail educational articles and reprints will be distributed to those who influence the sale and use of insecticides.

All together, the 1952 promotion program means *greater acceptance* for your insecticides which are formulated with Pyrenone. Make your plans now for your greatest year.

Pyrenone*

*Reg. U.S. Pat. Off.

U.S.I. INDUSTRIAL CHEMICALS CO.

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NOVEMBER, 1951

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Moorestown, New Jersey

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NOVEMBER, 1951

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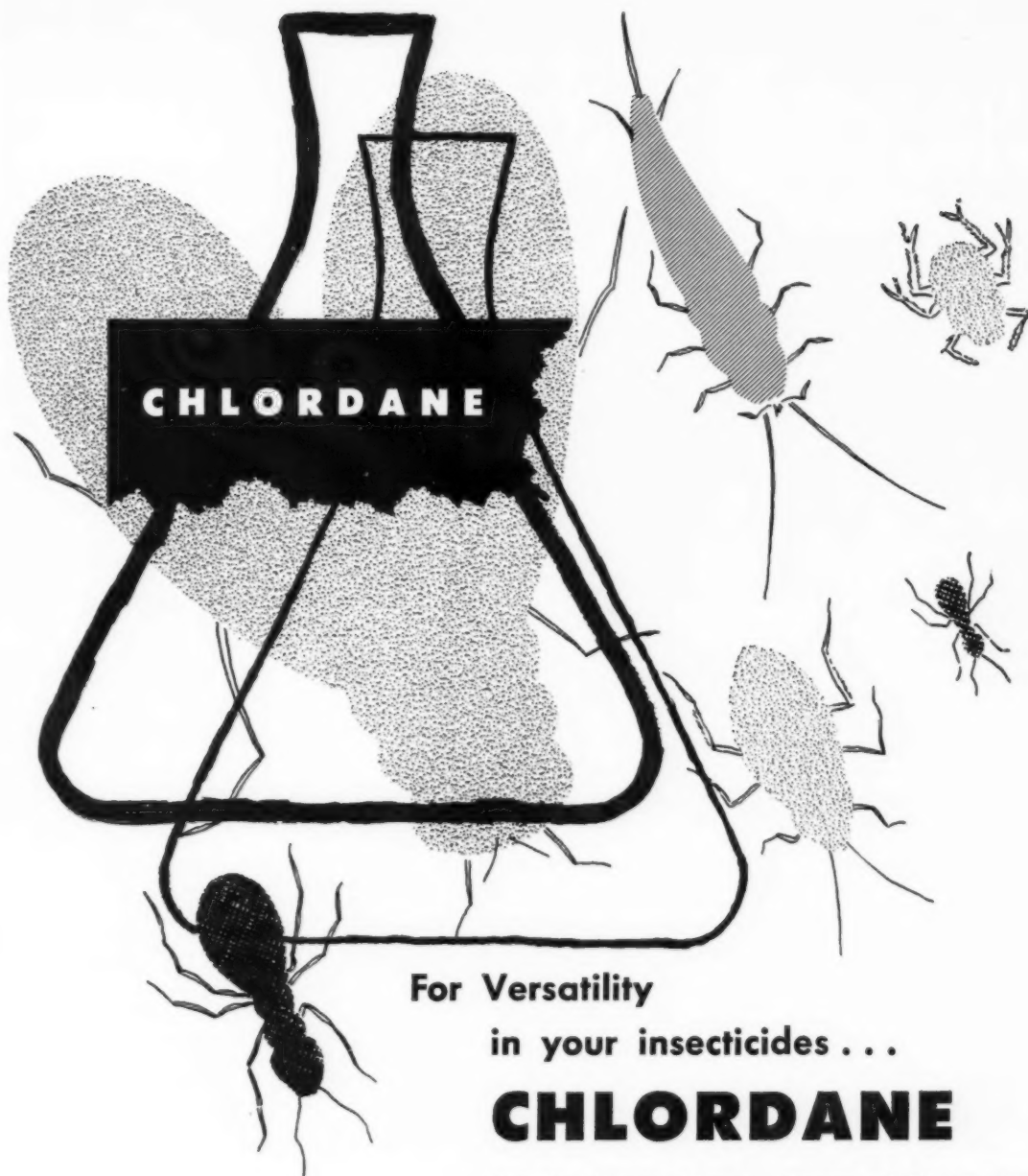
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R E P R E S E N T A T I V E S I N P R I N C I P A L C I T I E S

NOVEMBER, 1951

107

DUREZ RESINS

improve all the PUBLIC wants
in no-rub liquid polish



- Slip resistance
- Hardness
- Gloss retention
- Water resistance
- Wearability
- Shelf properties
- Economy

● Not many years ago liquid polish makers had to face a double problem: the supply of raw waxes was slowing down and the price was rising. But chemists were already at work on a highly successful solution to both parts of the difficulty. The answer was terpene phenolic resins, developed by Durez in cooperation with leading liquid polish producers.

Resins Improve Product

These Durez resins have a compatibility with natural and micro-crystalline waxes that makes them ideal for blending with either type of wax, or both. Properly formulated resin-bearing wax emulsions have all the properties demanded by consumers to an outstand-

ing degree. The polishes are notable for hardness and slip resistance. Gloss retention, spot resistance, wearability are enhanced, and the product stores without loss of these properties.

Since the resins are commonly used in concentrations of from 25% to 50% of the total wax-and-resin portion of the emulsion, their comparatively low cost is also a factor. Resin-bearing polishes give excellent value for the floor-maintenance dollar.

Blend in Standard Kettles

Blending in ordinary steam-jacketed equipment is common practice since Durez introduced the modified 13560 and 14140 resins. These resins have a melting point of about 90°C. Both have

exceptional hardening ability, particularly in formulations containing micro-crystalline waxes. Being made from a higher melting point base resin, Durez 14140 produces harder films with less tack.

Data and Help Offered

We have compiled a file of practical suggestions based on our extensive research work on formulations and methods of making emulsions and controlling properties. A copy is available on request. The facilities of our Customer Service Laboratory are available for consultation. Write Durez Plastics & Chemicals, Inc., 411 Walck Road, North Tonawanda, N. Y.

Low-melt
Durez blends in
steam-jacketed
kettles



PHENOLIC
RESINS

MOLDING COMPOUNDS

INDUSTRIAL RESINS

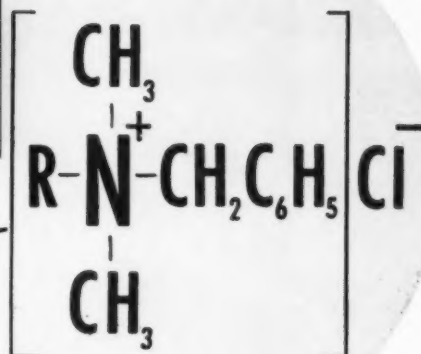
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Effects in **YOUR PRODUCTS**

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ONYX BTC* has been exhaustively tested by an independent biological laboratory. You can depend on its safety. We'll be glad to send separate toxicity test data—but you'll find it all included in the BTC Handbook, illustrated below.

IT'S A UNIFORM CHEMICAL COMPOUND

ONYX BTC is produced under rigid technical control, which holds its mixture of alkyl radicals at optimum bactericidal effectiveness. We can also supply BTC to meet USP specifications for benzalkonium chloride.

IT DOES NOT DETERIORATE IN STOCK

ONYX BTC shows no trace of chemical, bactericidal or physical change, no matter how long it is kept in storage.

IT HAS BEEN ACCEPTED IN FIELD USE

ONYX BTC for many years has been the most widely used concentrated cationic bactericide and deodorant. Its use in the type of products you make in all probability has been thoroughly tested and proved. On the other hand, if you have in mind a new application, we have ample data on related uses which will enable us to work out together the formulation you will require. Onyx BTC is sold in 50% aqueous solution to manufacturers for dilution and/or incorporation in their products.

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WRITE FOR THE BTC HANDBOOK . . . containing the complete story of its characteristics and uses. Onyx makes many other quaternary ammonium salts. Let us know of any particular types in which you are interested.



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tests demonstrate that convenient "DYSEPT"—with 5% hexachlorophene to the anhydrous soap content—is both bactericidal and bacteriostatic with continuous daily use. Charts show percentage reduction.



CHART No. 1. Percentage reduction in resident bacteria on hands with continuous daily use of undiluted "DYSEPT" for 4 consecutive days. Tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."

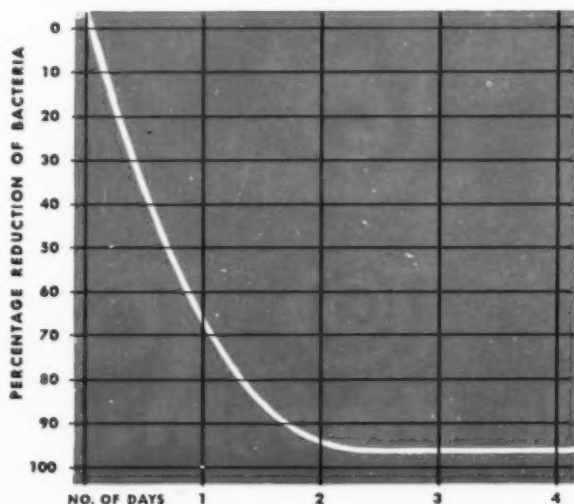
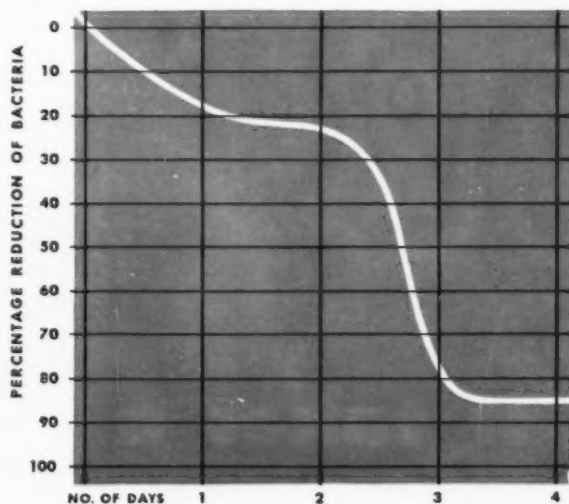


CHART No. 2. Percentage reduction in resident bacteria on hands with continuous daily use of "DYSEPT" diluted 1:1 with water for 4 consecutive days. Again, tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."



NOTE THESE FACTS ABOUT THE USE OF "DYSEPT"

"DYSEPT," containing 1% hexachlorophene to the total volume, leaves an invisible film not removed by rinsing which, with application one to three times daily for at least five days a week, reduces bacterial skin flora to about 5% of the usual amount and maintains that level. It has been found to reduce surgical scrub-up contact time with daily use. "DYSEPT" is non-toxic and non-irritating, and acts effectively even when diluted with water. A clinical brochure, with laboratory reports, suggestions for using and other technical data, may be obtained by mailing the coupon. "DYSEPT" is available through all Davies-Young distributors.

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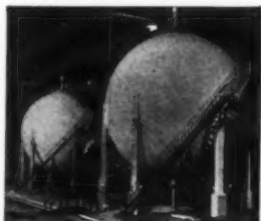
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NPCA Meets, Elects Yeager

A POSSIBLE solution to the problem of the resistance of houseflies to the toxic effects of DDT was described by Kenneth D. Quarterman, Senior Sanitarian, U. S. Public Health Service, Communicable Disease Center, Technical Development Services, Savannah, Ga., at the 19th annual convention of the National Pest Control Association, meeting at the Hotel Statler, Boston, Oct. 29-31. The approach to resistance currently being studied by the U. S. Public Health Service centers on the use of synergists in combination with DDT and other chlorinated type insecticides, to which houseflies and some other insects have built up varying degrees of resistance in periods ranging from two months to two years, depending on the locality.

"Fly control has many persons 'stumped' at the moment," Mr. Quarterman declared. "The U. S. Public Health Service has several large scale programs under way for studying the relationship of fly control to communicable diseases," he pointed out.

The speaker, who reviewed the status of several insecticides in fly control, prefaced his remarks with the statement that the "best method of fly control is not chemical but sanitation. Sanitation is not always the complete answer," he said, "but we must always take advantage of sanitation, using chemical as far as possible to achieve complete control," he added.

The fly control session, on the morning of Oct. 30, was also addressed by Dr. E. F. Knipling of the Division of Insects Affecting Man and Animals, Bureau of Entomology & Plant Quarantine, U. S. Dept. of Agriculture. He told the audience of almost 250 that the degree of fly control achieved varies in different parts of the U. S. In some states, he said, operators are still obtaining control with DDT, methoxychlor, etc. In the South control is poor with chlorinated type insecticides.

Continuous vaporization of in-

Work of U. S. Public Health Service to solve problem of fly resistance to insecticides is reported at 19th annual meeting of National Pest Control Assn. R. C. Yeager new president.

secticides, which currently is receiving a great deal of attention, was the subject of a discussion by Dr. Harvey L. Sweetman of the department of entomology of the University of Massachusetts, Amherst. This method of dispensing insecticides is particularly effective where insects are difficult to control by other methods. To function safely and effectively, Dr. Sweetman pointed out that vaporizing units must be of correct design, have the right controls and not give off excessive amounts of insecticidal material of relatively low toxicity.

A lengthy question and answer period followed the formal presentations and the showing of two films on fly control.

Tentative approval of an industry-sponsored public relations program, which would involve an increase in membership dues and the appointment of a public relations person to take charge of the program, was secured by J. Edwin Sameth of Western Exterminating Co., Newark, N. J., president of the National Pest Control Association. Other highlights of the meeting, at which a new president and a secretary-treasurer were elected for the coming year, included a session on termite control. At this session two papers were presented, a film was shown and a panel discussed the problem.

A simultaneous session on the afternoon of Oct. 29, was devoted to rodent control. An outstanding feature of this session was a review of the development and growing use of warfarin as a rodent control material. This was covered in a paper, "Rodenticides of the Anticoagulant Type" by Walter W. Dykstra of the Fish and Wildlife

Service of the U. S. Department of the Interior, who commented on the success of warfarin type compounds in controlling rodents, but cautioned against its possible toxic hazards. Pigs, he stated, are very susceptible to its toxic effects, whereas chickens are less susceptible.

Rodent proofing and the use of warfarin to control rodents on dumps were discussed by George W. Dyar of Rose Exterminator Co., Hartford, Conn., and F. S. Kirkpatrick of Residex Corp., Newark, N. J., respectively.

Safety in the use and application of insecticides and rodenticides, as well as fumigants and termites, the problem of individual or group irritations in the pest control industry and an evening session on selection and training of salesmen and servicemen were the concluding features of the meeting. Justus C. Ward of the Insecticide Division of the U. S. Department of Agriculture in discussing safety in the handling of insecticides and rodenticides covered such materials as chlordane, lindane, sodium fluoroacetate, warfarin and others. The view of the Food and Drug Administration on the question of safe handling of pesticides was given by A. Harris Kenyon, chief inspector of the Boston District of the Food and Drug Administration.

The social side of the meeting included a suppliers' open house, the evening of Oct. 29, at which time booth exhibitors were introduced; a sightseeing tour of historical sites around Boston made by over 450 persons; and the annual banquet for which Bill Cunningham, Boston newspaperman and radio commentator was the guest speaker.

The 31 booth exhibitors at the meeting included: Aegis Laboratories, Inc., Chicago, pigeon and other bird-pest repellents; American Cyanamid Co., New York, fumigants; Baird & McGuire, Inc., Holbrook, Mass., disinfectants and other chemical specialties; B & G Co., Philadelphia; John Bean Division, Food Machinery & Chemical Corp., Lansing, Mich., power sprayers; California Spray-Chemical Co., Richmond, Calif., insecticides; Cardinal Chemical Corp., Philadelphia, insecticide vaporizers; Chapman Chemical Co., Memphis, wood preservatives; Chemical Insecticide Corp., Brooklyn, insecticides; Dow Chemical Co., Midland, Mich., fumigants; Ernc-o Products Co., Ann Arbor, Mich.; Ewing Manufacturing Co., Jackson, Miss., power sprayers; Fish & Wildlife Service, educational exhibit; Gallant Termite Barrier, Inc., West Newton, Mass., termite barriers; Hudson Manufacturing Co., Chicago, sprayers and dusters; Innis, Speiden & Co., New York, insecticides; Lethelin Products Co., Mount Vernon, N. Y., pesticides and baits; William A. Maguire Co., Haverhill, Mass., rodenticides; Mercury Chemical Co., Chicago; Mine Safety Appliances Co., Pittsburgh, masks and respirators; S. B. Penick & Co., rodenticides and insecticides; Pest Control Equipment Co., New York, pest control equipment; Prentiss Drug & Chemical Co., New York, insecticides and rodenticides; Remington Products Corp., Elizabeth, N. J., insecticide vaporizers; Residex Corp., Newark, N. J., insecticides; Rose Exterminator Co., Chicago, spraying equipment; R. H. Russell Distributors, Charlotte, N. C.; Velsicol Corp., Chicago, insecticides; Virginia Smelting Co., West Norfolk, Va., insecticides; B. & D. A. Weisburger, New York, insurance.

In discussing ways to overcome resistance in flies to DDT and other chlorinated type insecticides, Dr. Quarterman pointed out that a synergist designated DMC (Bis[para-chlorophenyl]¹ methyl-carbinol) had been found that restores the effectiveness of DDT to a large extent. It does not restore the DDT to its original effectiveness, but it does improve DDT as a space spray. The combination of

the DDT and DMC was not very effective as a residual spray. One part of DMC to five of DDT were found to be effective. At Savannah, according to Dr. Quarterman, in small scale tests, one part of DMC to 19 parts of DDT were successful in fly control.

Other materials showing as much or more effectiveness than DMC, and which may even work as residuals were mentioned by Dr. Quarterman, although he did not divulge the names of the synergists.

The present status of fly control materials was outlined as follows by the speaker: Lindane. Still effective in many places for fly control, although it does not work in certain areas. It is not effective as a residual in Savannah because of the extensive testing with all types of insecticides. Lindane and methoxychlor are acceptable for fly control around dairy barns, and their use was recommended where they are effective. Lindane is also effective as a space spray for flies, although, according to the speaker, it is somewhat expensive. As a larvacide lindane was also recommended. Where odor is not a problem benzene hexachloride is useful as a larvacide and is cheaper and equally as effective as lindane, Dr. Quarterman stated. BHC can also be used on city dumps as a spray, since odor is no problem in applications of this sort. Both BHC and lindane are useful as fly larvacides, although neither is effective on surfaces subject to weathering.

Chlordane should not be sprayed in occupied houses for over-all control, Dr. Quarterman remarked. It is satisfactory for porches, barns and other out buildings and for roach control. It is effective as a space spray and larvacide, but flies are developing resistance to the material.

Dilan is a new material, which is available as a residual spray. It cannot be applied effectively as an emulsion, but is used as a 2½ per cent wettable powder. It is effective as a residual outdoors from 4 to six weeks and 18 weeks and upward indoors. One report showed fly resistance to dilan with an extremely resistant strain.

Dieldrin is an excellent insecticide but is very toxic to humans. It was hoped dieldrin would replace DDT

since it offered a lasting residual effect even on exposed outdoor surfaces. Resistance developed to dieldrin in two months in some areas, and in two years in others. There is no explanation for the wide variation in the development of resistance, although it is true that resistance develops faster in warmer regions than in others. Dr. Quarterman said he was not inclined to suggest dieldrin be used too profusely because of the toxicity factor. He did recommend that it be used as a last resort.

Pyrethrum with synergists can be used successfully, and is safe. It is expensive, however, and very scarce. Allethrin is a promising substitute for pyrethrum in some cases, but not in others. One-tenth of one per cent of pyrethrum and piperonyl butoxide was reported to be excellent for fly control.

Stressing the importance of sanitation, Dr. Quarterman also recommended the use of paradichlorobenzene crystals for controlling flies in garbage cans. He suggested that para crystals be sprinkled over the surface of the sludge in garbage cans as a fly control measure.

Elected to serve as president of the National Pest Control Association for the coming year is Robert C. Yeager of Rose Exterminator Co., Cincinnati. Mr. Yeager formerly was treasurer of the association. Elected secretary and treasurer at the closed business session Oct. 31, was Charles Kyle of Exterminal Corp., Dayton, O. William O. Buettner continues as executive secretary.

Plans for the 1952 convention, to be held at the Rice Hotel, Houston, Tex., were discussed at the meeting. Dates for next year's meeting, the 20th annual, are Oct. 20, 21 and 22.

Chem. Exposition Nov. 26

Over 400 companies, representing nearly 250 different classifications of equipment, materials, supplies and services will be accommodated at the 23rd Exposition of Chemical Industries, holding forth in Grand Central Palace, New York, Nov. 26 to Dec. 1. The Exposition is open daily from 11 a.m. to 10 p.m. Mon., Tues., Thurs., Fri., closing at 6 p.m. Wed. and Sat.

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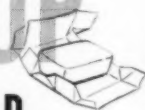
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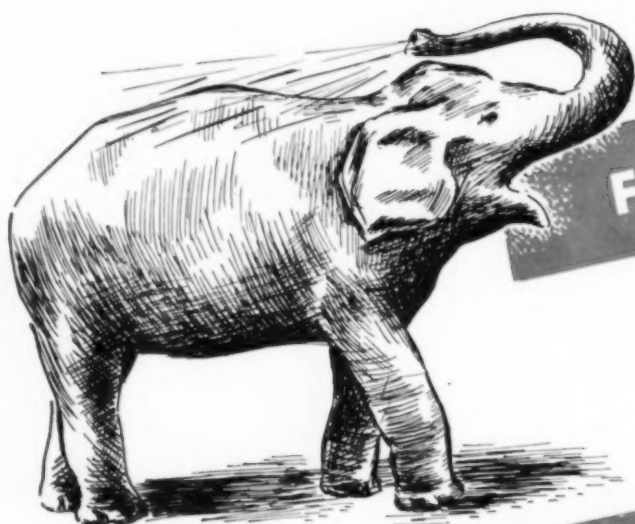
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A SECTION OF SOAP

IN A RECENT address before the combined meeting of state and federal "economic poison" control officials in Washington, John D. Conner, well known attorney and authority on insecticide, fungicide and allied laws, made out what we consider the best case yet why no further insecticide control legislation is needed. In spite of the apparent conclusions of the Delaney Committee, Mr. Conner pointed out in considerable detail that present laws, and especially the federal Insecticide, Fungicide and Rodenticide Act, are adequate to meet all contingencies, that they can and do protect the public. That actual tolerances of chemicals in and on foodstuffs have not been set by the Food and Drug Administration, even though prolonged hearings were held many months ago, is not a fault of law, but is due to the failure of FDA to act. The machinery is already there,—so why a new law or laws?

As a matter of fact the timing of the Delaney hearings themselves has been subject to sharp criticism from their inception. Would it not have been much more sensible to wait for the FDA to digest the mass of testimony presented at its hearings, and to announce its tolerances, which might have made the whole Delaney proceedings unnecessary?

Aside from the facts presented by Mr. Conner, it has been common knowledge for some time that this whole "chemicals in food" thing in Washington, of which the Delaney hearings were but a part, grows out of behind-the-scene endeavors of FDA to take over the registration and regulation of insecticides, fungicides, disinfectants and the like from the USDA which has handled it for more than 40 years. That this has engendered something of a feud which reaches right into Congress is also no secret. Only under such conditions could a farcical parade of ignor-

ance like the Delaney hearings exist. That is why we feel that the concise Conner analysis of the legislative situation might do much to clear the air if it were read *and heeded* by a few people in Washington. But is clarity the real objective?



ALTHOUGH a couple of months ago, reasons existed to believe that the floor wax factory operated by the Public Buildings Services in Washington as an "experiment" would take steps to quit manufacturing in competition with private industry, no move in this direction thus far has been made. The 30,000 gallon yearly floor wax "experiment" continues as before. In fact, rumor has it that production may be increased.

In the light of what we had heard previously, this latest information is somewhat disquieting. When mention was made that promises to end this "experiment" had been reported from Washington, we received a knowing smile and the information that this was the customary procedure to rid the scene of interferences from industry. In fact, each promise to quit during the past three years apparently has been followed by an increase in production.

This government wax plant obviously is no experiment. It could be the beginning of a much broader operation. But whether it is or not, the wax industry intends to keep fighting against the set-up as just another step toward socialism and an invasion of its rights as taxpayers. If the General Services Administration cannot or will not close down the plant and buy its floor wax from independent suppliers, then the matter will probably end up being batted around among some members of Congress. Plans to this end are in the making and the fight could get real dirty.

Spectrophotometric

Evaluation of Pyrethrum

THE present methods of pyrethrum analysis, the Seil method (1) and the mercury reduction method (2), are chemical in nature and suffer from one or all of the following drawbacks:

- (a) Excessive time required per set of analyses.
- (b) A limited number of analyses per operator due to the complexity of the methods.
- (c) Poor reproducibility.

The spectrophotometric procedure of analysis herein described gives values for total pyrethrin content, and is based on the absorption of ultraviolet light. The method is capable of rapid, multiple determinations of good reproducibility. Most laboratories now have facilities for the measurement of absorption in the ultraviolet range. The present method should have advantages over the more time-consuming chemical methods, particularly for control work.

The active constituents of pyrethrum, flowers or extracts, are predominantly the Pyrethrins I and II and Cinerins I and II (3, 4). Gillam and West (5) reported the ultraviolet light absorption of Pyrethrins I and II to be a maximum at wave lengths of 227 and 231 millimicrons, respectively. In a later paper (6) the same investigators reported on the ultraviolet spectrophotometric analysis of kerosene solutions of pyrethrum, attempting to correct for interference due to unsaturated materials in the kerosene by use of a solvent blank and very thin cells. The results differed widely from those obtained by the Seil method and cannot be considered satisfactory.

Beckley (7) recently reported on the use of a spectrophotometric

method for the determination of the total pyrethrin content of pyrethrum flowers. This method has good reproducibility and accuracy.

The method outlined herewith for the determination of total pyrethrins in pyrethrum flowers and powders is essentially the procedure of Beckley. Only slight modifications were made in the technique used for evaporating the extract and in the wave length used for measuring absorbency. In order to adapt the method to the analysis of pyrethrum extracts it was necessary to make further changes. It was found that the solvents normally used in commercial extracts could be removed under vacuum, the degree of vacuum applied being directly related to the boiling point of the solvents. After removal of the solvent the pyrethrin content may be determined by dissolving the residue in a specially denatured ethyl alcohol (alcohol 3A anhydrous), and measuring the absorbency (optical density) of the solution at 227 millimicrons. This wave length was found empirically to be the most suitable for measuring the absorbency of solutions containing pyrethrins. By use of a graph of absorbency vs. pyrethrin concentration, the total pyrethrin content of the original sample may be calculated.

Development of Method

A BECKMAN DU quartz spectrophotometer, fully equipped with accessories, was used. The instrument was checked for the wave length setting using the 253.6 millimicron line of the mercury arc. As a further check, the absorption spectrum of pure benzene in hexane, purified by means of silica gel (8), at a concentration of 0.1 g. of benzene per liter of hexane, was determined in the range of 214-266 millimicrons. The characteristic

benzene absorption curve was obtained and the maxima and minima points did not vary more than 0.5 millimicrons from the data of Hogness, Zscheile, and Sidwell (9).

Various solvents were investigated for preparing the final dilutions. These included purified petroleum ether (8) and hexane (8), absolute ethyl alcohol U.S.P., 95% ethyl alcohol U.S.P., specially denatured alcohol 3A anhydrous, methanol, and isopropanol. Alcohol 3A anhydrous* was selected as the most suitable solvent based on price, availability, and spectral characteristics. An arbitrary standard for the alcohol 3A anhydrous was taken as not less than 50 percent of the transmittance of distilled water at 227 millimicrons.

Since the method is extremely sensitive, all glassware used and the silica cells of the spectrophotometer must be cleaned thoroughly to remove traces of interfering materials. The filter paper used, the silica cells, and all surfaces of glassware that may come in contact with the test solutions should be handled with clean gloves to avoid contamination. The solutions must not be allowed to come into contact with rubber stoppers or connections.

Data for the plot of pyrethrin concentration vs. absorbency were obtained by determining the absorbency at 227 millimicrons of suitable dilutions of a standard solution of pyrethrins. The total pyrethrin content of this standard solution was determined by the Seil method. Dilutions were then made in the range of 0.1-1.5 mg. total pyrethrins per 100 ml. of solution. The data obtained are given in the following tabulation and the resulting graph is shown in Fig. I.

* The composition of alcohol 3A anhydrous is 100 gal. ethyl alcohol anhydrous to which is added 5 gal. commercially pure methyl alcohol.

* Presented at the 37th annual meeting of the Chemical Specialties Manufacturers Association, New York.

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Daniel Cristi,
and Herman Wachs***

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Total Pyrethrin Concentration (mg./100 ml. solution)	Absorbency (Optical Density)
1.13	1.137
0.77	0.768
0.60	0.601
0.56	0.557
0.39	0.387
0.24	0.244
0.11	0.109

Procedure for Flowers, Powders

WEIGH into an extraction thimble a quantity of the sample that will contain 20 to 40 mg. of total pyrethrins. Stopper this thimble with a similar shortened (lower third portion) thimble having pin holes punched through the lower end. Extract in a Soxhlet apparatus with petroleum ether (20-40°C.) for 6½-seven hours. Allow the extract to stand overnight for precipitation of any wax.

Filter by gravity through fluted "Whatman #4" filter paper (handle with clean gloves) into a 100 ml. calibrated volumetric flask using analytical transfer technique. Make to volume at 20°C. with petroleum ether. Pipette 2.0 ml. into a modified Kjeldahl flask, which is calibrated and marked at 100 ml. and has a ground glass joint neck (see Fig. II). Remove the solvent by immersing the flask in a 40°C. water bath and applying a vacuum of about 3.0 mm. for 15 minutes using a ground glass joint adapter to connect the flask to a source of vacuum.

Dissolve the residue by adding about 30 ml. alcohol 3A anhydrous and shaking the glass-stoppered flask on a shaking machine for about 5 minutes. Make to volume at 20°C. with alcohol 3A anhydrous.

Add the solution to a calibrated silica spectrophotometer cell and determine the absorbency (optical density) at 227 millimicrons, using alcohol 3A anhydrous as the solvent

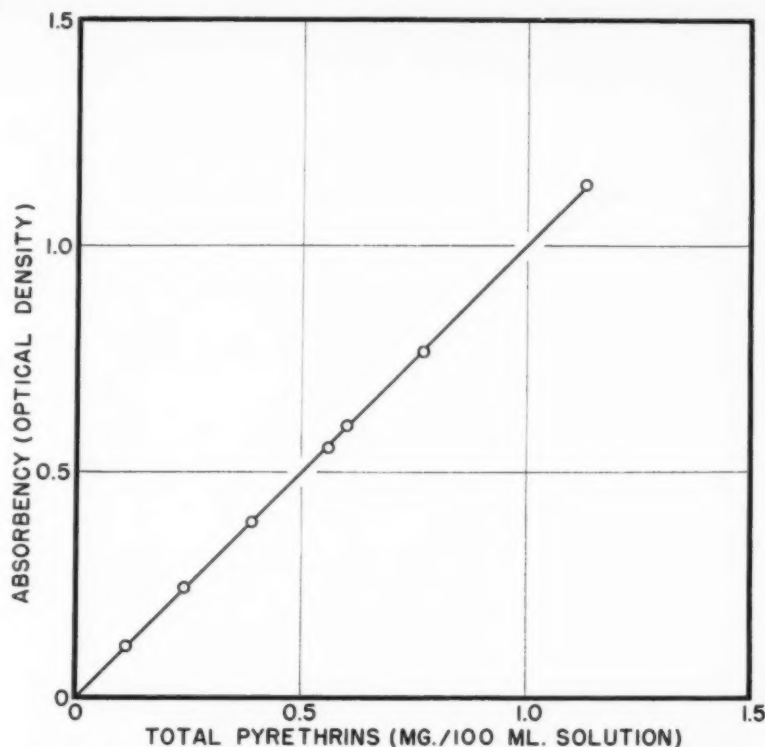


Figure I. Absorbency (Optical Density) at 227 $m\mu$ vs. Concentration of Total Pyrethrins.

blank in a similar calibrated silica cell. Subtract the value for the blank from that for the solution. Using this corrected value for absorbency, determine the pyrethrin concentration of the solution from the graph, Fig. I, and calculate the total pyrethrin content of the sample as follows:

$$\text{Total Pyrethrins (\%)} = \frac{\text{Conc'n. of solution (mg./100 ml.)} \times 50 \times 100}{\text{Sample Weight (g.)} \times 1000}$$

The results obtained by this method on samples of pyrethrum flow-

ers from various sources (Congo, Kenya, Yugoslav), with corresponding results from three independent laboratories by the Seil method, are shown in Table I.

Kerosene (deodorized base oil) solutions of pyrethrum were found to give anomalous results in the

spectrophotometer due to the variable content of unsaturated materials

Figure II. Assembly for Solvent Removal

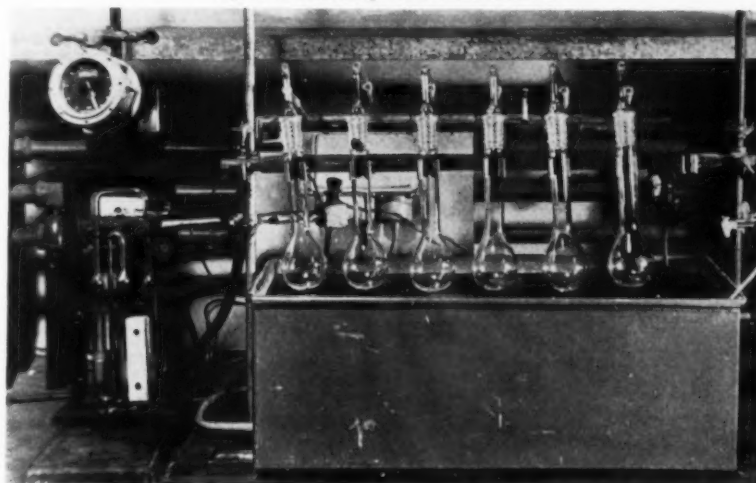


TABLE I
Comparative Results Obtained on Samples of Pyrethrum Flowers by the Seil Method and the Spectrophotometric Method.

Total Pyrethrin Content (%)					
Sample	Type* Flowers	Seil Method			Spectro- photo- metric Method
		Lab. I	Lab. II	Lab. III	
1.....	K	1.22	1.20	1.19	1.26
2.....	K	0.97	0.91	0.88	0.97
3.....	K	1.26	1.20	1.21	1.25
4.....	K	1.06	0.84	0.90	1.04
5.....	Y	0.48	0.43	...	0.49
6.....	K	1.47	1.48	1.44	1.53
7.....	K	1.10	0.97	0.84	1.15
8.....	K	1.02	0.88	0.95	1.08
9.....	K	1.15	1.02	0.99	1.16
10.....	K	1.16	1.08	1.04	1.04
11.....	K	1.09	...	...	1.09
12.....	C	1.46	...	...	1.46
13.....	Y	0.50	...	...	0.48
14.....	K	1.19	1.13	...	1.13
15.....	K	1.11	1.01	1.01	1.14
16.....	K	...	0.81	0.89	0.90
17.....	K	...	0.97	0.97	1.08
18.....	K	1.14	0.96	1.04	1.03
19.....	K	0.94	0.79	0.88	0.84
20.....	K	1.57	...	...	1.59
21.....	K	1.58	...	...	1.60
22.....	K	1.48	1.37	1.33	1.44
23.....	K	1.47	...	...	1.53
24.....	Y	0.45	0.50	...	0.46
25.....	Y	0.57	0.43	...	0.59
26.....	K	0.85	0.81	0.83	0.73
27.....	K	1.00	1.00	1.03	0.91
28.....	Y	0.62	0.67	0.62	0.53
29.....	K	1.10	0.97	0.98	0.91

* K = Kenya; C = Congo; Y = Yugoslav

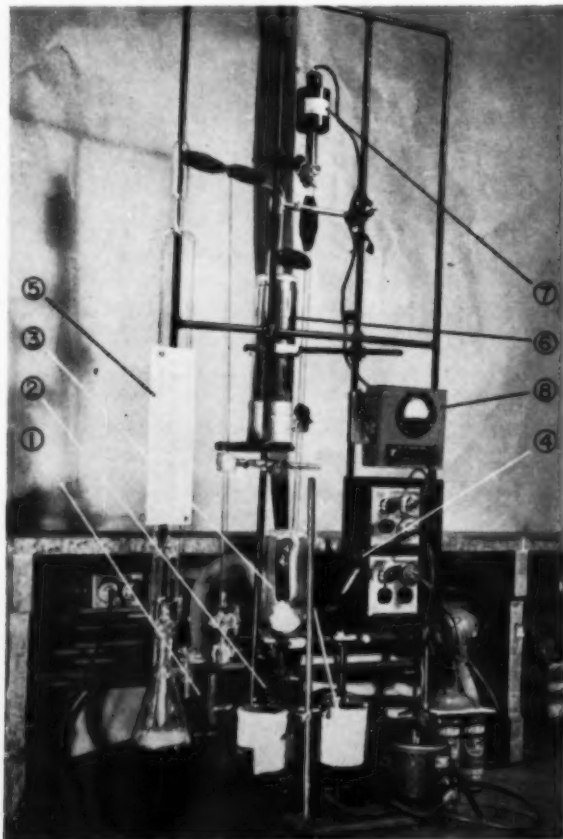


Figure III. High vacuum assembly for solvent removal.

1. Hy-Vac Pump
2. Diffusion Pump; VMF-20 (Distillation Products), air-cooled
3. Cold Trap
4. Lifetime Red Tube, containing sample of extract
5. McLeod Gauge, reading to .01 micron
6. Cold Trap
7. Pirani Gauge Tube
8. Indicating Box of Pirani Gauge

sene was minimized; however, the reproducibility for pyrethrins analysis at the lower end of the graph, i.e., 0.2 mg. pyrethrins/100 ml., was poor.

Consequently methods for the removal of the kerosene interference were studied. Immiscible solvent partition experiments were tried for removal of either the unsaturates or the pyrethrins but a quantitative separation method could not be developed.

A satisfactory method for removal of the kerosene interference was effected by means of high vacuum distillation at 40°C., the maximum temperature permissible to prevent heat decomposition of the pyrethrins. The equipment is shown in Figure III. The method developed for the analysis of pyrethrum extracts was as follows:

Weigh into a special bent tube* a quantity of the sample that will contain 20 to 40 mg. of total pyrethrins. Attach the tube to the cold trap of the Hy-Vac apparatus by means of a metal shim wrapped around the joint, followed by para rubber strips, and finally Apiezon sealing wax Q. Pump the system with the Hy-Vac pump until a pressure of 0.1 mm. is reached (usually, 20-30 minutes). Then turn on the diffusion pump and continue pumping. After the system reaches a pressure of less than one micron (.001 mm.), allow one hour at 40°C. (tubes heated in water bath) for complete removal of the solvent.

Disconnect the tubes and transfer quantitatively by means of distilled hexane (use distilled benzene for pyrethrum oleoresins) to a 100 ml. calibrated volumetric flask. Make to volume at 20°C. with the same solvent.

Proceed as described under procedure for flowers and powders starting with "Pipette 2.0 ml. into a modified Kjeldahl flask . . ."

The results obtained by this method on various samples of pyrethrum extracts, with corresponding results from four independent laboratories by the Seil method, are shown in Table II.

The spectrophotometric method for the determination of total pyrethrins, in its present form, is ap-

* "Pyrex" Lifetime Red culture tube, 25 x 150 mm., bent to an angle of about 30°.

plicable to materials containing only pyrethrins. Unsaturated compounds, aldehydes, ketones, carboxylic acids, and other materials interfere with the determination. The method is extremely sensitive to traces of impurities, hence the need for scrupulous cleaning of all glassware used.

With proper precautions, and when operating on a routine basis, a large number of determinations can be made in a very short time. Analyses can be made in two to three hours, compared with about two days for the chemical methods.

The method gives highly reproducible results, duplicate determinations checking within ± 1.0 percent. Thus a value of 12.0 percent is reproducible to within ± 0.1 percent. This is far better precision than is attainable by present chemical methods.

Summary

BASED on the method devised by Beckley (7) for the determination of pyrethrins in pyrethrum flowers by means of ultraviolet absorption, procedures have been developed for the spectrophotometric determination of total pyrethrins in both pyrethrum flowers and extracts. The spectrophotometric method is rapid and capable of giving results of excellent reproducibility.

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Since the synthetic waxes are manufactured from chemical raw materials, under laboratory controlled conditions, they are uniform in quality, and not subject to wide price

TABLE II
Comparative Results Obtained on Samples of Pyrethrum Extracts by the Seil Method and the Spectrophotometric Method.

Total Pyrethrin Content (%)					
Sample	Seil Method				Spectro- photo- metric Method
	Lab. I	Lab. II	Lab. III	Lab. IV	
Pyrethrum Extract No. 20 (Approx.)					
1	3.06	...	...	...	3.02
2	3.30	...	...	...	3.30
Experimental Samples					
1	13.7	...	...	...	13.6
2	12.9	...	...	...	12.8
3	12.6	...	...	...	12.7
4	13.5	...	...	...	12.7
4	13.1 (repeat of #4)	...	...	...	12.6
Pyrethrum Extract No. 100 (Approx.)					
1	12.3	11.9	11.8	11.9	11.2
2	13.2	13.5	12.7	12.9	12.4
3	14.3	13.5	13.2	12.6	13.0
4	14.3	14.3	13.7	13.3	13.8
5	15.9	15.9	15.6	16.2	15.9
6	14.1	13.4	14.0	14.1	14.0
7	15.5	15.0	14.9	15.3	15.1
8	13.0	12.6	13.2	13.8	12.7
9	12.3	12.0	12.1	11.9	11.9
10	13.0	12.1	12.9	11.9	12.7
11	14.7	13.5	14.3	14.7	14.1
12	14.2	13.0	13.3	13.9	13.4
13	13.3	13.0	12.6	13.3	12.9
14	13.4	12.9	12.8	13.3	13.3
15	15.1	15.0	14.5	13.7	14.4
16	14.1	13.1	13.6	13.6	13.1
17	12.9	12.8	12.4	12.7	12.2
18	12.2	12.3	12.1	12.5	11.8
19	12.4	12.3	12.4	12.4	11.9
20	12.5	11.8	12.2	12.6	12.4
21	12.8	12.4	13.1	12.3	12.8
22	14.0	13.0	13.5	13.1	13.6
23	14.1	13.9	13.8	13.4	13.9
24	14.8	14.5	14.2	13.7	14.0
25	14.0	13.9	14.0	13.6	14.1
26	13.4	13.6	13.6	14.1	13.6
Pyrethrum Extract 20% (Approx.)					
1	20.5	...	...	...	20.7
2	22.8	...	21.0	...	21.7
Pyrethrum Oleoresins					
1	12.5*	...	...	...	11.8
2	10.7*	...	...	...	10.3
3	9.2*	...	...	...	8.4

* By mercury reduction method.

* By mercury reduction method.

fluctuations. They are manufactured to meet certain requirements, and are used to replace natural waxes in many applications. However, the synthetic waxes cannot, at this time, replace the natural waxes in all cases. Some special properties of the natural waxes cannot be duplicated readily, so that carnauba wax is still one of the most important waxes used in floor wax emulsions.

High melting points, good water and oil resistance, non-toxicity and good electrical properties are important, distinguishing characteristics of a number of synthetic waxes. High melting products, (m.p. 100°-225°C)

are used as blending agents to raise the melting points and flash points of resins, waxes, and asphalts, without increasing the brittleness. The high flash points make these compounds valuable where natural waxes cannot be used, because of possible fire hazard.

The synthetic waxes are used also in hydrocarbon solutions combined with fungicides, and for water repellent coatings for fabrics to meet government specifications.

Literally thousands of synthetic compounds, with wax-like properties, differing in composition, properties, etc., can be formulated.

Wax Emulsions Formulation

PREDICTION of emulsifier requirements of a wax emulsion system is not possible with the present state of our knowledge. Some investigators have studied the relation between specific properties and structural differences for limited ranges of homologues or analogues. However, the selection of an emulsifier is still resolved largely by trial and error aided by practical experience. In an effort to systematize the approach to emulsion problems, and to reduce the amount of trial and error necessary to develop a suitable choice of emulsifying agents, we are endeavoring to develop the HLB concept of emulsifier selection.

The term HLB comes from the words hydrophile-lipophile balance, and denotes the relative balance of strength between the hydrophilic and lipophilic portions of the surface active agent molecule. We have classified our emulsifiers by an empirical index, or HLB number, which characterizes the hydrophilic-lipophilic nature of the material, and permits some prediction of its behavior in an emulsion.

An equally important phase of the HLB concept is the classification of the materials to be emulsified. Waxes and oils may be classified by the HLB of the emulsifier which is required for a given application. For example to form a water-in-oil emulsion of paraffin, an HLB of about four is satisfactory. For oil-in-water emulsion of the same wax an HLB of 10 is best, whereas to accomplish solubilization an HLB of 13 to 14 must be employed. For other waxes such as carnauba, different required HLB values will be found. To date it appears the carnauba and candelilla waxes require an HLB of 14 to 15 to prepare dry bright emulsions. Still other waxes and oils exhibit various required HLB values from nine to 17 for O/W emulsions. We have established tentative required HLB values for a number of common

waxes and oils, and this information makes it possible to make a preliminary selection of emulsifiers of approximately the proper HLB.

The advantage of employing the HLB system is in the reduction of the amount of trial and error. Given a group of emulsifiers, if we examine them roughly, we will be able to divide them into three groups. Those that are strongly lipophilic and generally oil soluble, those that are intermediate in hydrophile-lipophile balance, and those that are soluble in water or highly hydrophilic. Our work shows that an emulsifier may be unsatisfactory for a specific application because it is either of the incorrect chemical type, or it may have the wrong HLB. Thus, if a highly hydrophilic emulsifier is required for a given application or wax, and an emulsifier with a medium or low HLB is tried, we know before it is tried that it will not be satisfactory. However, if a homologue of this emulsifier were obtained that has the correct HLB, it might be satisfactory; the emulsifier would have been tried at its optimum hydrophilic-lipophilic balance. This means that if each chemical type is tried, with the HLB adjusted to the requirements of the emulsion, a true estimate of the efficiency of the chemical type will be obtained. The effect of chemical structure is not well known, and usually must be determined by actual trial.

The type of emulsion (O/W or W/O) which a surface active agent promotes is a function of HLB. Generally speaking an HLB of four to six is used for W/O emulsions while O/W emulsions are obtained at HLB values of eight or higher with solubilization being obtained at HLB values of 15 to 18.

The emulsification of waxes is usually accomplished at a medium to high level of emulsifier because of the desired fine particle size. Ingredients of a wax emulsion are usually chosen

on the basis of the final use of the emulsion. High melting point high luster waxes such as carnauba and candelilla are used in polishes, paraffin waxes are used for water proofing, resins are used as non-skid agents, silicones are used as water repellents.

Wax emulsions are used as polishes for floors, furniture, automobiles, etc. Other wax emulsions are designed for application to fruits, leather, textiles, paper and paper board and as printing aids. The type of emulsion required for these applications ranges from water-in-oil through oil-in-water to include the almost solubilized oil-in-water emulsions for the dry bright floor wax. The nature of the waxes used varies widely for these different purposes. The HLB of the emulsifier required to prepare the emulsion for the particular purpose involved depends upon the type of wax and the application.

How Plan Operates

BRIEFLY, the HLB plan of attack on a problem is: 1) determine the required HLB of the system by two or three series of systematic trial and error experiments; 2) try various chemical types adjusted by blending or by chemical means to the required HLB determined in step (1), thereby establishing the most favorable chemical type; 3) examine the most favorable chemical type at the indicated HLB and determine the minimum suitable concentration.

For many purposes, blends of emulsifying agents are recommended, and the overall HLB of such a blend is the sum of the contributions of the individual components; it may therefore be calculated by simple proportion from the composition of the mixture and the HLB values for the separate ingredients. It is also possible to calculate the HLB of such compositions by graphical means.

This system has been developed with Atlas non ionic emulsifiers. It is

* Presented before 37th mid year meeting C.S.M.A., Chicago, April 30, 1951.

natural therefore to question if there is adherence to the HLB system in ionic or soap emulsions. Monovalent soaps, generally used for O/W emulsification exhibit high HLB's, higher than the required optimum for emulsification. However, soap alone is seldom if ever, the sole emulsifier in a formula. We know that soaps hydrolyze, and the true emulsifier is a mixture or blend of soap and free fatty acid. The effect of the ratio of fatty acid to soap is illustrated by the results obtained from a series of emulsions all identical except for the ratio of fatty acid to alkali. The optimum result will be obtained in a narrow range of fatty acid to alkali.

By series of such emulsion tests we have been able to determine the apparent HLB of a number of ionic and non ionic emulsifiers, and the required HLB of oils and waxes.

The recommended procedure for selecting an emulsifier has been briefly outlined as consisting of three steps. These steps are as follows:

1) *Determination of the required HLB of the emulsion:* Waxes vary widely in properties and with sources and methods of refining. As a result it is best to determine precisely the required HLB of the wax or waxes to be used. This is done readily by preparing a series of emulsions using

a single pair of emulsifiers, blended to give different HLB values. Usually a half dozen of these test emulsions using variations in HLB of approximately $\frac{1}{2}$ an HLB unit will suffice. All emulsions should be prepared in the same manner using the test wax phase and preferably with an excess of emulsifier (10-20% in the oil phase).

Observation of such a test series will usually readily present the choice of the most efficient blend and thus the optimum HLB. If all of the emulsions are good and no great difference is noted, a repetition of the series at a lower emulsifier content is indicated. The converse is true if the series is quite poor. However, good emulsions at this point are not necessary since this series is run to affirm the "required HLB."

2) *Determination of the optimum chemical type:* Now that the "required HLB" is established, the best chemical type may be selected in a few well-chosen tests. In these tests, the emulsions are prepared with all things similar, including the HLB of the emulsifier, except the chemical types of emulsifiers employed. It is suggested that the emulsifiers being tested be blended to within 0.2 HLB of the optimum value. Various emulsions may test for example, laurate esters, palmitate esters, stearate esters, oleate esters,

esters of the "Span," "Tween," or "Myrj" type, or of the polyoxyethylene sorbitol esters, etc. The fact that various chemical types of emulsifiers can be compared on a common basis eliminates the complete trial and error basis for each and every type and is an important advantage of the HLB system.

It is necessary, of course, in blending emulsifiers of different chemical type to observe the usual precautions regarding incompatibility. In addition it is also known that some emulsifiers are not co-operative in a surface active sense, and no advantage is found in blending. This action is frequently obscure and is probably related to overall efficiency of the emulsifiers.

3) *Determination of the optimum quantity of emulsifier:* Having determined the optimum HLB and most favorable chemical type emulsifier, it is necessary only to prepare an additional series of test emulsions employing decreasing amounts of surface active agent to determine the minimum amount required for satisfactory performance.

Frequently a large part of this work may be eliminated by utilizing available information on required HLB data. Tables have been prepared showing the required HLB for a specific job with a known wax. As previously mentioned some variation in waxes occurs, and minor adjustments must be made to compensate for these variations.

The following advantages are obtained by utilizing the HLB system of selecting emulsifiers: (1) By means of required HLB values a preliminary selection of emulsifiers can be made eliminating many which are not suitable. (2) Evaluation of different chemical types can be made without a complete series of tests for each type, and a true picture of efficiency vs. chemical type is obtained by comparing the types at maximum effectiveness.

Although the prediction of emulsifier requirements of wax emulsion systems is not possible with the present state of knowledge, it is possible to classify waxes and oils by the HLB (hydrophile-lipophile balance) of the emulsion for given applications. The concept of HLB is designed to reduce the amount of trial and error in choosing emulsifying agents.



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SOAP and SANITARY CHEMICALS

Quaternary Ammonium Germicide¹

By W. S. Mueller and D. B. Seeley²

Department of Dairy Industry, University of Massachusetts

THE effect of the constituents of potable water used for diluting quaternary germicides is of prime interest and importance today. The United States Public Health Service (1947) reported data which showed that hard water reduced the germicidal action of quaternaries. About the same time Mueller and Seeley (1948) accumulated data from a series of natural hard waters obtained from the Massachusetts State water laboratory. The first point observed was that there was not necessarily a correlation between water hardness, as measured by the soap titration method, and amount of interference with germicidal action of the quaternary. Samples were found with relatively low hardness and high interference power. As the study progressed, it became evident that where calcium and magnesium had approximately the same interference pattern, the ferric ion was much more deleterious. At that time, no satisfactory explanation could be assigned to the great interfering power of the iron. The preliminary studies also showed that a change in anions (Cl^- , NO_3^- , and SO_4^{--}) produced no change in the amount of inactivation.

These preliminary observations indicated the need of further study in order to determine how the metallic ions affect the germicidal action of the quaternary. It should be pointed out that the study here reported includes concentrations of metallic ions which are far in excess of those normally found in potable waters. The high concentrations were deliberately chosen in order to make the study more thorough.

1. Contribution No. 758 of the Massachusetts Agricultural Experiment Station. Supported in part by a grant-in-aid from Sterwin Chemicals, Inc., New York.

2. This article is based upon a doctor's thesis presented to the graduate school by Donald B. Seeley, June 1949. Present address—Chas. Pfizer and Co., Inc., Groton, Conn.

Quaternary. An alkyl dimethyl benzyl ammonium chloride was used. This product is marketed by Sterwin Chemicals, Inc. under the trade name, "Roccal." A 200 p.p.m. concentration was employed in all tests with the metallic ions. In other phases of the study the concentration was varied to suit the requirements of the test.

Metallic salts. The salts selected for this study contained cations from different sections of the periodic table. Thus, it was possible to compare the effects of changing the valence, the atomic weight, and other factors which may affect the degree of interference by the cation. The metallic ions (from chloride salts) tested were: potassium, sodium, calcium, magnesium, zinc, nickelous, manganous, barium, cupric, ferrous, ferric and aluminum. The metallic ions in the form of sulfates tested were: potassium, sodium, lithium and ferric. Sodium nitrate was also included in the study. In general, the chlorides were the most suitable anions for this study because they are quite soluble and easy to use. However, it was found necessary to substitute ferric sulfate in place of the ferric chloride because the latter was too unstable.

Source and preparation of solutions. All salts were Will Corporation C. P. Analyzed. Distilled water with pH between 6.5 and 6.7 was used in the preparation of all salt solutions, germicide solutions, dilution bottles, inactivator and media. The salt solutions were made fresh each day and were not diluted to the desired concentration until just prior to the test.

Hydrogen-ion concentration measurements. All pH values were determined with the Beckman pH meter, using a glass electrode.

Germicidal test procedure. The test organism was *Escherichia coli* and the inactivator was sodium naphuride. The test procedure used was a slight modification of the test reported by Mueller et al (1947). In brief, the method consists of the addition of a standardized inoculum to a definite volume of germicide contained in a three-neck distilling flask. After various times of contact, a one ml portion is withdrawn and added to the sample collection bottle which contained 99 ml of sterile distilled water plus the inactivator. Plate counts are made and the results are reported as percentage survival or kill for definite periods of

TABLE 1
Approximate minimum concentrations of the quaternary giving
99.999 per cent kill at varying pH's with contact times
of 1/2 and 5 minutes.

Contact time	pH							
	3	4	5	6	7	8	9	10
	p.p.m.							
1/2 min.	100	100	50	40	40	40	25	20
5 min.	100	35	30	25	15	12	10	8

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contact time. For this study, all germicidal tests were made at 25°C. In most instances, a one-half and five minute contact time was used. Two ml of inoculum which contained approximately 500 million organisms per milliliter was added to 98 ml of test solution, which gave a concentration of approximately 10 million bacteria per milliliter. Under those conditions it was possible to determine 99.999 per cent kill. The 100 ml dilution in the sample collection bottle was used instead of 10 ml because additional protection by dilution was added to the action of the inactivator.

Results

Effect of pH on the quaternary. It is known that the hydrogen ion will affect the action of quaternaries (Dunn, 1937; Hoogerhiede, 1945; Quisno and Foter, 1946; and Hucker *et al*, 1948). Since the salt solutions used in this study varied considerably in pH, it was necessary to have a thorough understanding of the effect of pH alone in order to measure the interfering action of the cations. Specific information needed was lacking in the literature; therefore, it was necessary to make a rather extensive study on the effect of pH on the germi-

cidal action of the quaternary.

Before the effect of pH on the quaternary could be determined, it was necessary to find out whether any pH value being tested had germicidal power itself. Any reduction in organisms due to pH would prevent drawing correct conclusions on the killing power of the germicide. Therefore, the standard germicidal test for the study was made on a series of distilled waters to which HCl or NaOH had been added so that the pH ranged from two through 10. The results showed no evidence of any reduction in numbers of *E. coli* under the conditions of the test.

In the study on the effect of pH on the quaternary, the pH ranged from three to 10. Although the salts of all the cations studied produced a pH lower than seven, higher pH values were included in order to have a more complete picture.

Table 1 gives the approximate minimum concentrations of the quaternary giving 99.999 per cent kill at varying pHs with contact times of one-half and five minutes. The most obvious effect of pH is the increase in interfering power as the pH is lowered. At the one-half minute contact time, the quaternary was five times as effective at pH 10 as at pH 3. When

the five minute contact time is compared in the same way, the quaternary was more than 10 times as effective. Figure 1 shows the percentage survival of *E. coli* after five minutes contact with varying concentrations of germicides at pH values from three to 10. It will be noted that as the pH is raised the slopes of the curves increase, which represents an increase in resistance of the last survivors. The slopes of the survival curves for the one-half minute contact time were found in general to be similar to those for the five minute contact time and therefore are not shown.

Effect of monovalent cations.

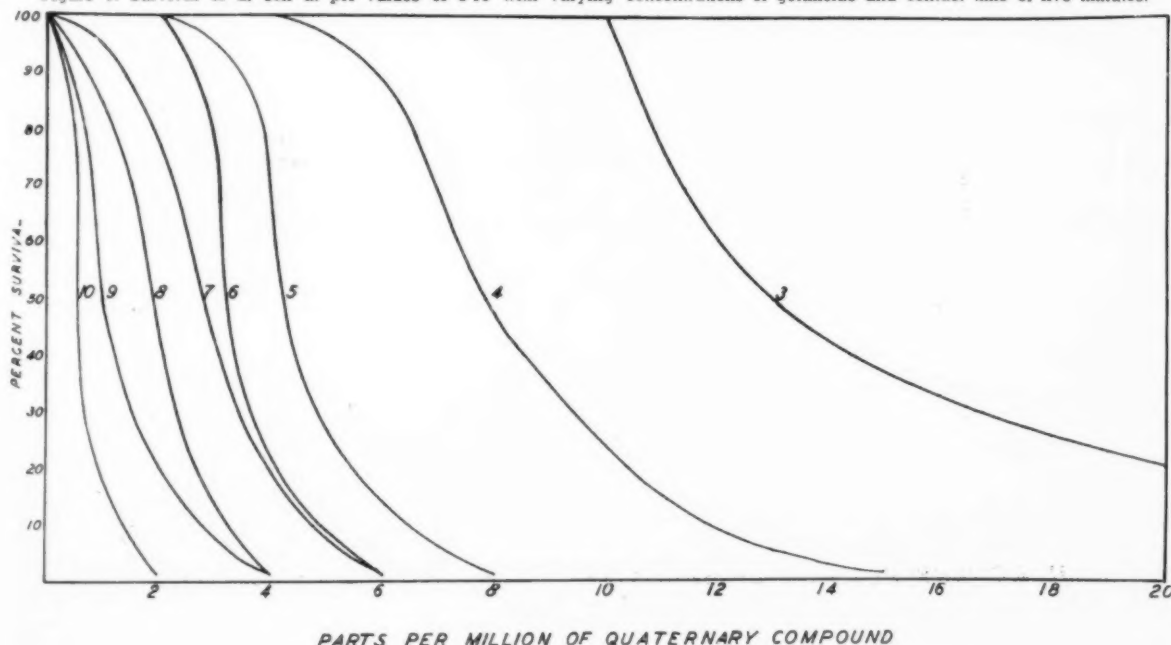
Since valence was found to be an important factor in interference power of cations, the results are presented in the order of increasing valence.

The following is a list of monovalent salts with their concentrations which were first investigated:

Salt	p.p.m.	Molarity
KCl	1000	.013M
K ₂ SO ₄	1000	.006M
NaCl	1000	.017M
Na ₂ SO ₄	1000	.007M
Li ₂ SO ₄	1000	.009M
NaNO ₃	1000	.012M

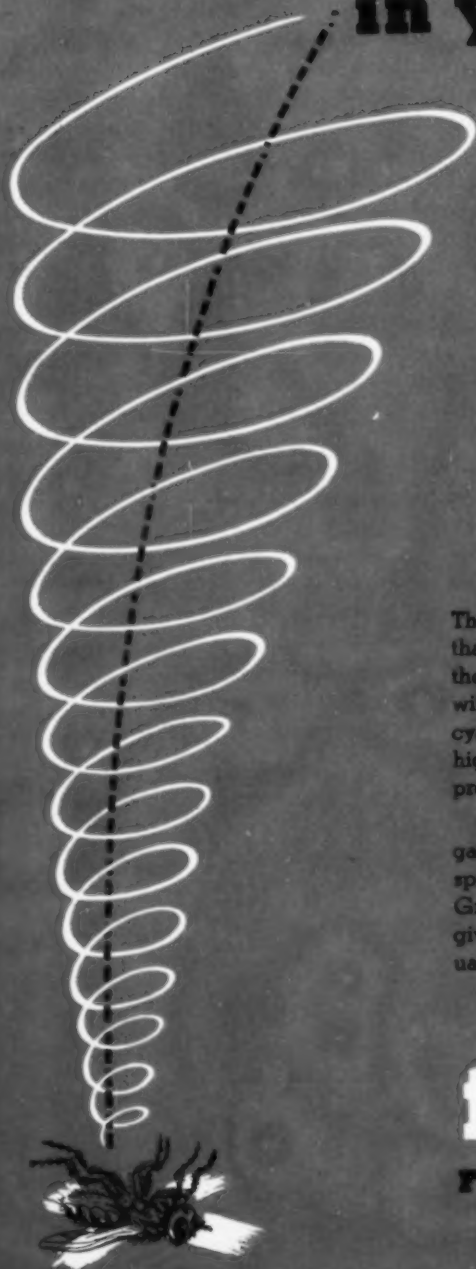
These represent monovalent salts which might be encountered in water supplies. The solutions were made on a parts per million basis be-

Figure 1. Survival of *E. coli* at pH values of 3-10 with varying concentrations of germicide and contact time of five minutes.



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TABLE 2
Effect of sodium chloride on germicidal action of the quaternary (200 p.p.m.)

Molarity of NaCl	Percentage survival	
	contact ½ min.	contact 5 min.
2.00	78.000	2.8
0.20	0.036	0.0
0.02	0.000	0.0

Inoculum—10,000,000 per milliliter of test solution

cause water analysis records are commonly reported as such. The 1000 p.p.m. was selected because it is a larger amount than would ordinarily be found in a water supply. None of these monovalent salts showed measurable interference with 200 p.p.m. of quaternary after one minute contact with the test organism.

Table 2 shows the effects of higher concentrations of sodium chloride. It will be noted that the 2.0 M salt gave considerable interference with 200 p.p.m. quaternary. However, such a concentration is far in excess of any salt normally occurring in potable waters. As judged by the results obtained with sodium chloride it may be concluded that monovalent cations do interfere with the germicidal action of the quaternary when used in high enough concentrations. While the study of pH was undertaken in order to understand the action of the salts studied better, it should be kept in mind that the hydrogen ion itself is a cation and an increase in its concentration resulted in a decrease in germicidal activity of the quaternary.

Effect of divalent cations. From the practical standpoint, the two most important divalent ions found in water

TABLE 4
Effect of various salts on the germicidal action of the quaternary (200 p.p.m.)

<u>Salt</u>	<u>Atomic wt. of cation</u>	<u>pH of .02M salt</u>	<u>Molarity of salt inhibi- tory*</u>	<u>Molarity of salt used</u>	<u>Percent survival at contact time</u> <u>½ min.</u>	<u>5 min.</u>
<i>Monovalent</i>						
NaCl	22.99	6.85	2.0	.02	0.0	0.0
				.2	.036	0.0
				2.0	78.	2.8
Li ₂ SO ₄	6.94	5.0	.75	.009	0.0	0.0
KCl	39.09	6.75	2.0	.013	0.0	0.0
<i>Divalent</i>						
MgCl ₂	24.32	6.35	.5	.0002	0.0	0.0
				.02	71.0	0.0
CaCl ₂	40.08	6.40	.5	.0002	0.0	0.0
				.02	55.	0.0
MnCl ₂	54.93	6.05	.05	.0002	.013	0.0
				.02	98.	3.7
FeCl ₂	55.85		.001	.0002	.....	...
				.02	.....	.21
NiCl ₂	58.69	6.40	.005	.0002	.010	0.0
				.02	100.	4.5
CuCl ₂	63.57	3.85	.001	.0002	44.	.024
				.02	63.	53.
ZnCl ₂	65.38	5.80	.001	.0002	.002	.003
				.02	100.	31.
BaCl ₂	137.36	6.50	.25	.0002	0.0	0.0
				.02	99.	.67
<i>Trivalent</i>						
AlCl ₃	26.97	3.00	.0005	.0002	99.	92.
				.02	100.	93.
FeCl ₃	55.85	2.10	.001	.0002	75.	97.
				.02	97.	12.
<i>Hydrogen</i>						
HCl	1.008	3.00**	.0001	.001M	0.0	0.0

* Figures based on Porter 1947.

** This is a .001M solution which is the lowest pH tested for effect on the germicide.

Inoculum—10,000,000 per milliliter of test solution

supplies are calcium and magnesium. These salts are present in many waters in sufficient quantities to give trouble with water hardness. The effect of calcium chloride on the germicidal properties of a 200 p.p.m. quaternary solution is shown in table 3. Since the results of a similar study with magnesium chloride follow closely those with calcium chloride, only the latter

are reported in the table. The concentrations used, which are reported as parts per million of the cation and not the salt, are comparable to or exceed the hardness of water supplies commonly encountered in the United States. It was found that 300 or 400 p.p.m. of either calcium or magnesium gave their first significant reduction in germicidal activity of the 200 p.p.m.

TABLE 3
Effect of calcium chloride on the germicidal action of the quaternary (200 p.p.m.)

Calcium p.p.m.	Percentage survival after varying periods of contact								
	½ min.	1 min.	2 min.	3 min.	4 min.	5 min.	6 min.	7 min.	8 min.
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200	0.80	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300	24.5	4.3	0.02	0.00	0.00	0.00	0.00	0.00	0.00
400	52.2	24.5	0.14	0.00	0.00	0.00	0.00	0.00	0.00
600	55.5	45.7	13.9	0.34	0.00	0.00	0.00	0.00	0.00
800	55.8	50.6	29.3	6.9	0.39	0.00	0.00	0.00	0.00
1000	62.0	55.8	40.0	25.7	9.2	1.4	0.45	0.03	0.00

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TABLE 5

Effect of ferric sulfate and aluminum chloride on the germicidal action of the quaternary (200 p.p.m.)

Trivalent Ion	Percentage survival after varying periods of contact					
	p.p.m.	1 min.	2 min.	3 min.	5 min.	10 min.
Iron	0	0.00	0.00	0.00	0.00	0.00
Iron	4	21.9	11.5	12.1	7.4	4.8
Iron	6	95.0	100.0	89.2	99.0	82.3
Iron	8	78.4	100.0	93.1	100.0	88.2
Iron	10	100.0	100.0	100.0	99.0	91.2
Al	0	0.00	0.00	0.00	0.00	0.00
Al	10	100.0			100.0	

Inoculum—1,000,000 per milliliter of test solution

quaternary solution.

The other divalent salts studied are listed in table 4. It will be noted that copper had more inactivating power than any of the other divalent cations. Directly correlated with this result is the pH which is also the lowest of all the divalent salts tested. After evaluating the data on the effect of pH on the quaternary, it appears that only a small amount of the inactivation by the copper can be ascribed to the pH with the specific nature of the cation accounting for the rest. It will be noted that copper is the only divalent salt showing inactivation with the dilute solution which does not show close to 100 per cent survival at the one-half minute contact time of the concentrated solution. This may be due to the germicidal action of the salt

itself. Other survival figures with the copper are all higher than for the other divalent salts.

Barium is classified as a light metal, although its atomic weight is considerably higher than that of calcium and magnesium, the other two divalent light-weight metals tested. The results suggest that atomic weight in this group was not a significant influencing factor in interference.

Ferrous chloride was included in the study largely as a comparison for ferric chloride which will be discussed under the trivalent ions. Ferrous chloride hydrolyzes quickly in solution and it was necessary to use the fresh solution immediately.

It will also be noted that any one of the divalent salts had more interfering power than the monovalent

salts. A .02 M divalent solution appears to have about the same inactivating power as a 2.0 M monovalent solution. With the exception of copper and zinc, divalent salts display the same large difference between the one-half and five minute contact times as was shown with sodium chloride. Though the divalent salts that interfered the most also had the lowest pH values, it is shown that only a portion of the inactivating power can be explained by the action of pH.

Effect of trivalent cations. The trivalent cations tested were the ferric and aluminum ions. The ferric sulfate was used more often than the ferric chloride because it gives a more stable solution. Table 5 shows the strong interfering action of the two trivalent salts studied. Only small quantities of trivalent salts are necessary to give as much or more interference than the divalent salts.

When ferric chloride and aluminum chloride were used, the two cations are compared on an equimolar basis in table 4. After one-half minute contact, the percentage survival for the iron and aluminum is very similar. No doubt the decrease in percentage survival after one-half minute contact for the ferric chloride solution is

(Turn to Page 141)

TABLE 6

Comparison of salt effect and pH effect on the germicidal action of the quaternary

Salt used .02M solns.	Approx. pH of salt soln.	Germicidal action of quaternary in presence of the salt	Germicidal action of quaternary with no salt but pH the same
		Percentage survival with 200 p.p.m. of quaternary	Approximate minimum con- centration of quaternary giving 0% survival
One-half minute contact			
ZnCl ₂	6	100	40
NiCl ₂	6	100	40
MnCl ₂	6	98	40
BaCl ₂	6	99	40
CuCl ₂	4	63	100
FeCl ₃	3	95	100
AlCl ₃	3	100	100
Five minute contact			
ZnCl ₂	6	31	25
NiCl ₂	6	4.5	25
MnCl ₂	6	3.7	25
BaCl ₂	6	.67	25
CuCl ₂	4	53	35
FeCl ₃	3	12	100
AlCl ₃	3	95	100

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TDE Ethyl Analog and Heptachlor

By Norman Mitlin, R. H. Nelson, and W. A. Gersdorff

U.S.D.A., Agr. Res. Adm., Bureau of Entomology and Plant Quarantine

TWO new chlorinated hydrocarbons have recently been prepared commercially for possible use as insecticides. One is the ethyl analog of TDE, known also as Q-137. The other is a mixture of heptachlor (70 percent) and an unidentified isomer of chlordane and is called heptachlor 70-30. Determination of the toxicity of these materials to house flies (*Musca domestica* L.) is reported in this paper.

Pure p,p'-DDT, heptachlor of a high degree of purity, and pyrethrins were also included in the tests. The plan was to compare the two materials with materials chemically related to them—the ethyl analog of TDE with DDT, the usual standard for such compounds, and heptachlor 70-30 with

heptachlor. Tests with pyrethrins were made principally to show that the populations of house flies had about the usual susceptibility, because it has been noted before that there is variation in the relative resistance of flies in different populations to materials chemically so different. Two concentrations of pyrethrins were sufficient for the purpose. Of the total pyrethrins in the sample 54 percent was pyrethrins I and cinerin I.

Procedure

THE materials were dissolved in refined kerosene at such concentrations that the mortality results, as indicated by preliminary tests, would span the 50-percent mortality point.

The tests were made by the

Campbell turntable method against house flies reared by standard laboratory procedure. Knockdowns and mortalities were estimated from tests replicated six times with flies two to three days old. Approximately 100 flies were used in each test.

The mean mortality results were plotted graphically on log probability paper to find the concentrations of materials causing 50 percent mortality. Straight lines were fitted and their concentrations were estimated from these lines. However, the standard errors of these concentrations were obtained from an analysis of variance of the logarithms of the daily estimations of these values. The standard error expressed in logarithms was multiplied by the natural logarithm of 10

TABLE 1
Relative toxicity to house flies of the ethyl analog of TDE and heptachlor 70-30

Material	Concentration	Knockdown in 25 minutes	Mortality in 1 day	Concentration causing 50 percent mortality	Relative toxicity as compared with		
					Pyrethrins	DDT	Heptachlor
	Mg./ml.	Percent	Percent	Mg./ml.			
Heptachlor 70-30	0.2	1	59	0.184 ± .02	13	1.9	0.51
	0.1	1	17				
	0.05	1	8				
Heptachlor	0.2	2	81	0.093 ± .01	26	3.7	1.0
	0.1	1	51				
	0.05	2	26				
Ethyl analog of TDE	4.0	44	91	1.71 ± .19	1.4	0.20	0.054
	2.0	25	70				
	1.0	2	16				
DDT	1.0	49	87	0.348 ± .04	6.9	1.0	0.27
	0.5	25	71				
	0.25	19	29				
	0.125	4	11				
Pyrethrins	2.0	100	43	2.39 ± .26 ¹	1.0	0.15	0.039
	1.0	100	17				

¹ Slightly extrapolated.

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(From Page 137)

due to the rapid hydrolysis of the solution. Both ferric chloride and aluminum chloride have normally low pH values in solution. When their solutions were adjusted to pH 7, they failed to inactivate the quaternary. When the iron solution was adjusted to pH 5, or six, there was no inactivation of the quaternary, but a slight inactivation was noted at pH 4. Thus the salt loses its inactivating power upon hydrolysis.

The trivalent salts have more interfering power than the divalent salts. A .0002 M trivalent salt appears to have about the same inactivating power as a .02 M divalent salt.

Apparently, differences in atomic weight are of little importance in determining the amount of interference from a trivalent salt. Aluminum, with only one-half the atomic weight of iron, has just as much inactivating power.

Relative interference due to pH and the specific nature of the salt. Table 6 compares the effect of pH with the effect of the salt. It is intended to show the relative importance of pH and the specific nature of the salt in determining the amount of interference. Careful examination of the results will show that in all cases the individual nature of the cation caused much more interference than did the pH value at which the test was performed.

Discussion of Results

IN TABLE 4 is found a comparison on an equimolar basis of the results obtained with most of the salts tested. The concentration of the salt given as being inhibitory is based on work done with *E. coli* in broth culture with a three-day incubation period. However, in the experimental procedure used in this study, the longest time that *E. coli* was subjected to the salt concentrations used was five minutes, after which the salt was diluted 1:100. Thus, the salt concentrations were more dilute than the inhibiting concentration as given in table 4.

The results indicate that the mono-, di-, and trivalent salts interfere approximately in a ratio of 1:100:10,000. Thus, a 2.0 M NaCl, .02 M $MnCl_2$, and .0002 M $AlCl_3$ all give about the same interference pattern. It is interesting to note the similarity between this ratio and the ratio established by other phenomena. Ingram (1939) has shown that the rate of oxygen absorption by *B. cereus* is affected by mono-, di-, and trivalent salts in an approximate ratio of 1:100:1,000. A similar ratio has also been established by the Hardy-Schulze rule of colloidal chemistry, which states that the precipitating power of an electrolyte depends upon the valence of the ion whose charge is opposite to that of the colloidal particle. The influence of the valence is in the form of a geometrical progression, $1: x : x^2$ or in this case, 1:100:10,000. This is not a hard and fast rule but appears to be generally true. There are differences between ions of the same valence as can be seen in the results of the divalent ions used in this study. These have been explained by differences in ionic radii, degree of hydration, ionic mobility, and amount of adsorption.

If the bacteria in suspension in this study are thought of as a colloidal suspension, then the Hardy-Schulze rule may be used to interpret the results. Thus, the higher the valence of the ion, the more strongly it is attracted and held to the surface of the organism. In this way, the negative charge on the surface of the cell is reduced, lowering the attractive power of the cell for the quaternary cation. Also if the cations of the salt are in possession of the sites on the bacterial cell surface, they will block the action of the germicide in many cases. This seems probable when it is realized that the ionic weight of the quaternary cation is 322 and that of aluminum 27 and of iron, 56. Thus the aluminum ion has a valence of three to attract its weight of 27 to the cell surface and the quaternary cation has only a valence of one to attract its weight of 322.

The results show that a .0002 M solution of aluminum ions gave over 90 per cent survival at the five minute contact time. The concentration

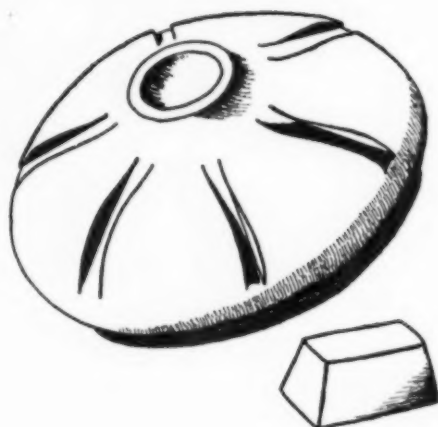
of the quaternary solution was 200 p.p.m. or .00056 M. It can be seen, then, that there were approximately three times as many quaternary ions in solution as there were aluminum ions. Comparatively speaking, the divalent ions failed to show as much inactivation at the five minute contact time but did show good inactivation at the one-half minute time with the .02 M solution. This suggests that the divalent ions were capable of blocking the surface sites as did the trivalent ions but were more quickly replaced by the germicide. Thus, by the end of the five minute time, much of the divalent ion had been replaced by the quaternary cation. If one visualizes the cations as oscillating in an orbit at the cell surface, it would appear that the divalent ion would have a greater degree of oscillation due to its lower valence. In effect, this would be a looser bond with the cell surface, allowing more rapid replacement by the quaternary cation. This replacement is facilitated by the fact that the quaternary cation contains a long chain attracted to the interfaces and having a tendency toward hydrophobism.

The concentration of the monovalent salt needed to show strong inactivation was above 10 per cent. This inactivation may be explained by the theory that the sodium ion, attracted by the negatively charged cell, is held more or less firmly at its surface by the osmotic pressure of the salt solution.

Porter (1947) summarizes the work of several investigators who have arranged the salts in a lyotropic series based on their germicidal action. It can be seen from table 4 that the inhibitory values given also correlate well with the order of interference. This comparison lends further support to the theory that the salts interfere with the germicide by competing for the cell surface, since a salt, in order to be germicidal, must first be attracted to the organism. If the salts used in this study are arranged in the order of interference, generally they follow the series collected by Porter.

1. The quaternary ammonium germicide became less effective as the pH was lowered. Five times as much germicide was needed to give an ap-

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proximate 100 per cent kill in one-half minute at pH 3.0 as at pH 10.

2. All of the cations tested interfered with the germicidal action of the quaternary ammonium compound.

3. Valence and pH were the two most important factors determining the interfering power of a cation. The valence and the specific nature of the salt seemed to have more effect than the pH.

4. Atomic weight had little or no effect on the interfering power of a cation.

5. Monovalent, divalent and trivalent ions had interfering power approximately in the ratio of 1:100:10,000, respectively.

6. The cations arranged in order of decreasing interference are aluminum, ferric, copper, zinc, nickel, manganese, barium, ferrous, magnesium, calcium, and the monovalent cations.

7. Results from this study support the theory that any metallic cation will interfere with the quaternary ammonium germicide by competing for the negative sites on the cell surface.

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United States Public Health Service.
1947 Quaternary ammonium compounds. *Milk Dealer*, 36, 10: 78-80.

Liquid Soap

(From Page 49)

or oily odors are not appealing nor are strong perfumes.

The liquid soap, as used, should give the maximum number of hand washes per dollar spent for the product and for the labor to keep the washroom dispensers filled and operating. Where the soap plant is within easy trucking distance of the user and there is adequate storage space, it may be most practical to sell a use-dilution of liquid soap. Where marked savings in transportation and shipping container costs can be made by using a concentrated soap, the highest concentration which can be conveniently handled by the user seems most desirable. Of course, the user is interested in getting an assured source of supply which means that the liquid soap manufacturer should make a moderate profit.

TDE Toxicity

(From Page 139)

(2.303) to obtain the relative standard error. The standard errors of the arithmetic means, given in table 1, are the products of these and their respective means.

The relative toxicity of the materials was obtained from the inverse ratio of the concentrations causing 50 percent mortality. Each compound was compared with pyrethrins, DDT, and heptachlor.

Although resistance varied between individual populations, the values for the relative toxicity of DDT and heptachlor, as determined from the tests with all populations, did not differ greatly from those obtained in recent comparisons of these materials. Heptachlor was approximately 26 times as toxic as the pyrethrins; in a previous comparison (1) the value was found to be about 28. DDT was approximately seven times as toxic as the pyrethrins; in a recent comparison (2) the same value was obtained.

Heptachlor 70-30 was about one-half as toxic as heptachlor. There-

fore, it may well be considered as an effective insecticide in that group of chlorinated hydrocarbons. This mixture was about 10 times as toxic as the ethyl analog of DDT.

The ethyl analog of TDE was about one-fifth as toxic as DDT, and therefore slightly less toxic than the more closely related compound TDE, since, as previously reported (2), the latter was about one-fourth as toxic as DDT to house flies. A communication from the manufacturer states that the acute toxicity of the ethyl analog of TDE to mice is 6,600 mg. per kilogram. If the chronic toxicity to mice should prove to be equally low, then this material should have value as a space spray.

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Knockdown Effect of DDT

The knockdown effect of DDT powders which were prepared with Panther Creek Bentonite and Iwanai Bentonite, mixed in various ratios, was tested on the common housefly *Musca domestica* L. The carriers indicated no synergistic nor antagonistic effect on the toxicity of DDT. S. Nagasawa. *Botyu-Kagaku* No. 16, 104-107, June (1951).

"Mitin" Mothproofing Agent

Studies of "Mitin" (trade-marked mothproofing agent made by Geigy Co., New York) on wool indicate that this compound has a toxic effect on moth larvae. Although the wool treated with Mitin is first devoured by the larvae, and partly digested, the total effect is small, and semi-digested and undigested Mitin-treated fibers are found in the intestines and in the excreta. The damage produced in Mitin-treated wool is insignificant. R. Lotmar. *Melliand Textilber* 32, 68-70 (Jan. 1951) through *J. Soc. Dyers and Colourists* 67, No. 7, 290 (1951).

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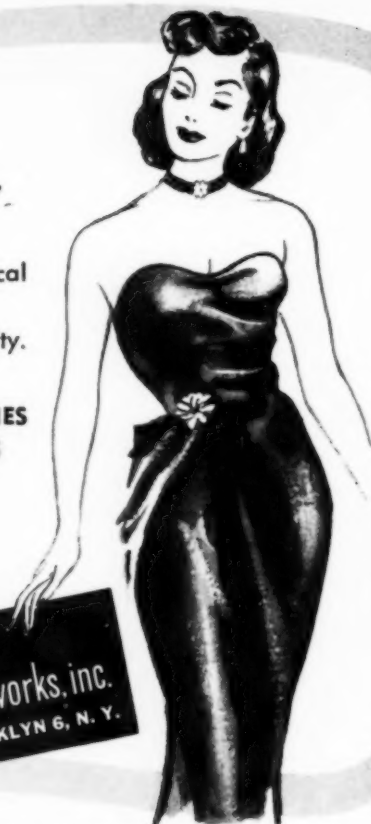
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Purcell Joins Meer Corp.

John W. Purcell, general sales manager of Pearson & Co., Mobile, Ala., since the first of this year, recently was named assistant to the president of Meer Corp., New York. In his new post he will be in charge of sales for the firm, which recently opened a modern milling and drug extraction plant at North Bergen, N. J. Before joining Pearson & Co., Mr. Purcell was vice-president of Prentiss Drug & Chemical Co., New York. He was associated with the sales end of that firm for 15 years, until his resignation Dec. 1, 1950. He first entered the chemical industry as a member of the insecticide division of Sherwin-Williams Co., Cleveland, O., later going with McLaughlin Gormley King Co., Minneapolis, where he spent five years before joining Prentiss.

Legge Expands in Peekskill

Lease of 20,000 square feet of industrial plant space in Peekskill, N. Y., by Walter F. Legge Co., New York manufacturer of floor waxes and polishes, from Retlaw Realty Corp., was announced recently. The Peekskill plant on Central Ave. represents an expansion of the manufacturing operations since the company also has its main factory in Brooklyn.

Jameson Forms Company

A. R. Jameson, until recently first vice president of Velsicol Corp., Chicago, recently announced the formation of his own firm, Jameson Chemical Co., with offices at 218 East Huron St., Chicago 11. The new firm is supplying on a national scale chemical raw materials manufactured to specification.

Sales manager as well as vice president of Velsicol for the past 12 years, Mr. Jameson was associated with that firm from September, 1935, until his resignation last month. Previously, he spent a number of years with the Pure Oil Co.

A graduate of Defiance (Ohio)

College, Mr. Jameson took post graduate work at Purdue University. He holds membership in the American



A. R. JAMESON

Chemical Society, Society of Professional Engineers and Surveyors, State of Ohio, the New York Chemists Club and the Chicago Drug and Chemical Association.

New Insect Repellent

Columbia Chemical Co., Chicago, recently announced development of a new repellent for flies and other flying insects which is being promoted for use in business offices. Dispersal in a room is effected by means of an adapter which is attached to the company's "Glyco-Master" dispensing device, originally developed to combat airborne organisms.

FDA Germicide Seizure

A case involving the misbranding of a germicide was reported recently by the Food & Drug Administration in Notices of Judgment #3421-3440, covering drugs and devices. In the case, #3435—"Misbranding of Germicide," analysis showed the product consisted essentially of epsom salt, zinc sulfate, boric acid, a salicylate, water and acetone. Statements made in leaflets wrapped around the bottle were false and misleading since the product was not effective for the purpose claimed, according to the

F.D.A. Typical statements were that the product was effective for barber's itch, blackheads, blood poison, eczema, skin scale, etc. Consent decree, judgment of condemnation and a Court order for the product to be destroyed resulted.

Janitor Supply Co. Moves

American Janitor Supply Co., Washington, D. C., recently moved to new and larger quarters at 1141 Ninth St., N.W., Washington 1, D. C. The firm was formerly located at 728 Ninth St. The telephone number is HObart 5400.

Floor Machine Trade Rules

Proposed trade practice rules for the floor machinery industry were issued recently by the Federal Trade Commission, Washington, D. C. At the same time it was announced that hearings on the rules were to be held on Nov. 2, 1951 at the Federal Trade Commission Building in Washington.

Johnson Chorus Places

The All-Girl chorus of S. C. Johnson & Son, Inc., Racine, Wis., won third place honors recently in a competition among women's choral organizations at the 22nd annual Chicagoland Music Festival, sponsored by the *Chicago Tribune*.

Pesticide Laws Adequate

"Proper enforcement in a co-operative manner by the agencies concerned" of legislative authority now existing rather than passage of new laws controlling pesticides was recommended in an address by John D. Conner, legal counsel for the Chemical Specialties Manufacturers Assn., before the fifth annual convention of the Association of Economic Poisons Control Officials. The convention was held Oct. 6 at the Shoreham Hotel, Washington, D. C. At the meeting E. W. Constable, state chemist of the Department of Agriculture of North Carolina, was elected president. Rodney C. Berry, director of the division of chemistry of the Virginia Department of Agriculture was elected vice-president, and A. B. Heagy of the Uni-

versity of Maryland was re-elected secretary-treasurer.

In questioning the need for added legislation affecting pesticides, as suggested during the hearings of the Delaney committee investigating chemicals in food, Mr. Conner said that ample federal authority now exists in law to protect the public health from injuries caused by residues. He cited the Federal Insecticide, Fungicide and Rodenticide Act and the authority contained in the Federal Food, Drug and Cosmetic Act to establish residue tolerances. He asked: "can we say that this authority is inadequate without ever having put it to the test?"

A review of developments in the use of warfarin since it was released 15 months ago was presented by W. W. Dykstra, assistant chief of predator and rodent control of the Department of the Interior. He said that 1,000,000 pounds of the material in five and 10 percent concentrations have been sold since warfarin was released under some 300 trade names.

New Canco Plant

Opening ceremonies at the new American Can Co. plant in Los Angeles were held recently. The new Harbor plant, in the Wilmington district, will supplement the existing Canco plant in Los Angeles.

Chicago Fair Dates

Dates for the second Chicago International Trade Fair have been set for March 22 to April 6, 1952, at the Navy Pier. Some 33 or more nations will participate, it was indicated at a September conference between Chicago industrial leaders, U. S. government representatives and foreign diplomatic and consular agents, which launched plans for "perking up world commerce" through this fair. I. S. Anoff of the Chicago Association of Commerce and Industry was selected as president of the enterprise and headquarters have been established in the Merchandise Mart, Chicago. At the first International Fair in 1950 several U. S. sanitary supply firms interested in developing an export business were represented and a number of foreign firms in this field participated.

Hercules Shifts O'Neill

Hercules Powder Co., Wilmington, recently announced the ap-



PAUL O'NEILL

pointment of Paul A. O'Neill as St. Louis sales representative for the company's naval stores department. He replaces Joseph M. Carbonara, who has been transferred to the export department in Wilmington to handle sales of Hercules products in Cuba, Venezuela, Mexico, and Colombia.

In his new assignment, Mr. O'Neill supervises the sale of rosin and terpene chemicals, turpentine, and toxaphene in the St. Louis territory. He studied chemistry at Drexel Institute of Technology, Philadelphia, and has been associated with the naval stores department of Hercules in Wilmington since 1931. During World War II he served with the 5th Armored Division, and saw action in the European theatre.

Mr. Carbonara, a graduate of Fordham University, has been a member of the Hercules naval stores sales staff since 1939. He had been assigned to the New York and Boston offices until July, 1946, when he was transferred to the St. Louis office.

E. Milton Regier, who replaces Mr. O'Neill, has been associated with Hercules since 1941, working principally in the vinsol resin sales.

Tracy Named to NPA

O. V. Tracy, manager of the chemical products division of Esso Standard Oil Co., New York, was recently named deputy director of the

chemical division of the National Production Authority. He is serving directly under Kenneth Klipstein, director of the chemical division, but will move into Mr. Klipstein's post when the latter moves up in the NPA organization.

Resistance in Cockroaches

Cockroaches may develop a resistance to the newer insecticides, similar to that noted in houseflies, a recent report from Virginia Agricultural Experiment Station, Blacksburg, Va., indicates. A study was made of the effects of chemical insecticides to determine if sub-lethal treatments with the pesticides will result in development of resistant strains of insects and whether insects surviving the treatments are normal in rate of growth, development and reproductive capacity. Four different species of insects, including the German cockroach, were employed in the tests with four compounds: DDT, benzene hexachloride, chlordane and toxaphene.

No difference in reproductive rate or abnormalities in development were observed, "so far," between treated and untreated strains, says a brief progress report, included in the Virginia station's annual report for 1950. However, it continues, "A delayed toxic action from the insecticides has been observed in the case of one insect species. Some resistance is appearing in the treated strains of the German cockroach, and slight resistance is indicated in treated strains of the large milkweed bug." None of the insects under observation, it was added, have been treated through a sufficient number of generations to expect much resistance at the time the report was made.

In another approach to the effects of insecticides, observations were made on the pH existing in the various regions of the alimentary canal of the American cockroach and various agricultural pests. From the data obtained and the known solubility of certain stomach poisons at different pH values, the report explains, it should be possible to determine whether there is any correlation between solubility of chemical insecticides and toxicity to insects.

New Synthetic Wax

A new synthetic wax designed to duplicate Japan Wax in all essential characteristics and offering the unusual property of self-emulsification, was announced recently by Concord Wax Co., Moorestown, N. J. The new wax, "Aquawax" is another of several waxes originated by the firm to replace difficult to obtain imported waxes. It is being shipped at prices under 40 cents per pound.

Franklin Catalog Sheets

Catalog sheets of its line of metal accessories covering those for washrooms and office, as well as price lists on the items, were announced recently by Franklin Metal Products Co., Chicago. The firm's new line of steel waste baskets for office or hotel room use with imprints of the hotel names and self-cleaning and safety sand urns are illustrated and described in the catalog sheets. They are available on request by writing the company at 1500 So. Wabash Ave., Chicago 5.

IAMAFS Name Thomasson

H. L. Thomasson, who was president-elect of the International Association of Milk and Food Sanitarians, Inc., was recently appointed to the full time position of executive secretary and business manager of the *Journal of Milk and Food Technology*. For the past 13 years he has served as Milk Sanitation Consultant, Indiana State Board of Health, in charge of the fluid milk program. He is a graduate of Franklin (Ind.) College. Mr. Thomasson is making his headquarters at the Ritz Building, 12½ E. Broadway, Shelbyville, Ind., at which address the *Journal* will be published after the first of the year.

Diversey Coast Changes

The advancement of F. O. Spence, formerly Pacific division manager, to the post of regional sales manager, was announced recently by Diversey Corp., Chicago. R. C. Perry, formerly assistant Pacific division manager in charge of sales for the entire state of California, has been named manager to succeed Mr. Spence. Mr.

Spence has been with Diversey since 1931, beginning as a territory salesman in Seattle. He has been Pacific division manager since 1939.

Mr. Perry joined Diversey in 1942 as food industries field service



F. O. SPENCE



R. C. PERRY

representative in the Southwestern division. Shortly thereafter he was named senior salesman for the Nebraska territory. In 1945 he was appointed eastern division district manager, and a year later was named assistant manager of the Pacific division.

Heads New CSC Department

A new production development and quality control division has been established in the production department of Commercial Solvents Corp., New York, it was announced recently. Dr. Graham W. McMillan has been appointed manager of the newly created division, with headquarters in Terre Haute, Ind. Dr. McMillan, who received his doctorate at the University of Illinois, joined the research department of Commercial Solvents in 1940 and was transferred to the production department in 1946.

GRAHAM W. McMILLAN



Dolge Sales Mgr. Retires

E. W. Thomas, for the past 25 years sales manager of C. B. Dolge Co., Westport, Conn., retired recently after having been with the firm since 1918. A dinner was given in his honor, the culmination of 33 years service with the firm.

New Watkins Building

J. R. Watkins Co., Winona, Minn., announced recently that it will construct a one-story office and warehouse building at 31st Street and Tracy Ave., Kansas City, Mo. The building will occupy 10,000 square feet on an 18,700 square foot site.

Dolge House Organ Appears

The role of the modern anti-septic soap and its value in reducing bacteria on the skin are described in the November issue of "The Clean-up," house magazine of C. B. Dolge, Westport, Conn. Other articles include a discussion of how floor waxes can be restored in case they freeze, why most workers prefer liquid hand soaps for washing the hands and face and the cause of dermatitis caused by contact with cutting oils.

O-Cedar Names Reps.

Chaimson Brokerage Co., Baltimore, was recently appointed sales representatives in Baltimore, Washington, D. C., and surrounding territory for O-Cedar Corp., Chicago.

New Federal Finish

A new silicone fortified finish that the manufacturer claims wears better and looks better longer was announced recently by Federal Varnish Division, Chicago. Pale in color, it is said not to discolor floors, is water resistant and requires no polishing. The new finish will dry in a matter of minutes, it is claimed. Trade-named "Sila-Gloss," it has the approval of the Underwriters Laboratory, where it was tested and approved as an anti-slip material for asphalt tile, rubber tile, linoleum, terrazzo, wood and concrete. The new finish was formulated to fill the need for floors in institutions, industrial plants, public buildings, etc.

Conference Hears Schafer

Harold Schafer, president of Gold Seal Co., Bismarck, N. D., makers of "Glass Wax," was one of the featured speakers at the Upper Midwest sales conference held at the Radisson Hotel, Minneapolis, Nov. 8. The annual meeting, the fifth of its kind, is sponsored by the Minneapolis Chamber of Commerce and Minneapolis Sales Executives Club. More than 750 executives from Minnesota, the Dakotas, Wisconsin and Iowa were expected to attend.

Johnson Sponsors Research

Four universities have been granted graduate fellowships in chemical research by S. C. Johnson & Son, Inc., Racine, Wis. It was announced recently by Dr. J. V. Steinle, research and development vice-president of the wax manufacturing company.

The University of Wisconsin and Ohio State University were each granted five-year fellowships and one-year fellowships were granted to Marquette and Northwestern Universities.

Commenting on the fellowships established this year, Dr. J. V. Steinle said, "The granting of graduate fellowships by S. C. Johnson & Son, Inc. is part of the company's long range program in fundamental research on wax technology. We believe that industrial support of fundamental research in university laboratories is important. This support creates opportunities and provides help for deserving students and leads to the discovery of basic data on subjects of general interest to the wax industry and allied fields."

The research studies at the University of Wisconsin under the direction of Professor H. A. Schuette will involve preparation and properties of hydroxy fatty acids.

At Ohio State, the development of study of wax-like materials is being carried on under the supervision of Professor J. B. Brown. Under Professors J. R. Koch and J. R. Surak the fellowship work at Marquette will deal with the use of radioactive tracer elements in studying the properties of wax films.

The research at Northwestern,

directed by Professor A. A. Frost, is a continuation of previous studies of electrostatic charges on protective film.

During the past six years, S. C. Johnson & Son, Inc. has sponsored fellowship studies in laboratories of eight universities.

Form Chemicals, Inc.

Chemicals, Inc., a new industrial chemical jobbing firm, at 1218 West Pierce St., Milwaukee, Wis., was formed recently, it was announced by T. O. Johnson, president of the firm. In addition to Mr. Johnson, who was formerly with Essential Chemicals Co. of Milwaukee and Badger Chemical Co., B. L. Elbaum is serving as secretary and treasurer. Mr. Elbaum is the owner of No-Name Products, Inc., which manufactures sodium hypochlorite, household ammonia, and specialized cleaning compounds. No-Name continues to be operated as an individual corporation. Both men are graduates of the University of Wisconsin.

Currently Chemicals, Inc., is handling materials for Monsanto Chemical Co., St. Louis, General Chemical Co., New York, Victor Chemical Works, Chicago, and Westvaco Chemical Division of Food Machinery & Chemical Corp., New York.

Pletcher Joins Penick

Harold E. Pletcher, below, was recently appointed assistant production manager of S. B. Penick & Co., New York. He was formerly in charge of production for the Ansco Division of General Aniline & Film Corp., Binghamton, N. Y., where he also directed the activities of the industrial and chemical engineering department. He is a graduate of Manchester College, where he received a B.S. degree, and Syracuse University, where he received an M. S. degree in chemistry.



Food Sanitarians Elect

The following officers were elected at the recent meeting of the International Association of Milk and Food Sanitarians held at Glenwood Springs, Colorado.

H. L. Thomasson, president, Sanitation Consultants, Shelbyville, Ind.; H. A. Barnum, president-elect, Chief Milk Sanitation Division, City of Denver, Col.; first vice-president, John Faulkner, Milk and Food Section, United States Public Health Service, Washington, D. C.; second vice-president, I. E. Parkin, Dairy Extension Service, Pennsylvania State College, State College, Pa.; auditors: James Doughty, Santa Fe, N. M.; W. H. Haskell, Beloit, Wis. The retiring president is Dr. K. G. Weckel, Department of Dairy and Food Industries, University of Wisconsin.

Warren Haviland Loses Arm

Warren Haviland of Warren Haviland Corp., St. Louis, was struck in the right arm and side by a shell in Korea recently, where he was serving in the front lines as a lieutenant in the U. S. Army. His right arm was amputated above the elbow on Oct. 1, in Tokyo. He is now in Percy Jones Army Hospital, Sec. 6, Ward 4, Battle Creek, Mich. Following his recovery he is expected to be separated from the service and rejoin the firm in five or six months.

Gilruth Atlas Advtg. Head

James A. Gilruth, a senior editor on the staff of Harry W. Smith, Inc., New York technical publicity firm since June 1950, was recently appointed as manager of the advertising and sales promotion division of Atlas Powder Co., Wilmington, Del. He was associated with the advertising department of Atlas for 10 years until 1946, when he became sales promotion manager of the storage battery division of Philco Corp.

Gardner Harvey, who has been acting manager of Atlas advertising and public relations division, is assisting in an advisory capacity with the reorganization of advertising and public relations functions until Nov. 30, when he will be granted a leave of absence.

New Lightfoot Dispenser

A new, extra large powdered soap dispenser that has two quart capacity, said to be enough for more than 500 hand washings, was announced recently by Lightfoot Schultz Co., New York. The new dispenser is fabricated of chrome plated, heavy gauge steel and features an observation window that runs the full length of the unit. Soap is dispensed by means of a simple, springless mechanism. The dispenser is mounted by means of a bracket that fastens on flat surfaces, horizontal or vertical pipes, wash-fountains, bowls, etc. The feed control is said to be tamper-proof.

Glyco Ups Dollinger

Jack H. Dollinger, acting as assistant sales manager and technical assistant to the executive vice-president of Glyco Products Co., Brooklyn, since 1946, was recently appointed sales manager. Prior to 1946 he was associated with the research and development laboratories of the company. A fellow of the American Institute of Chemists, he is a member of the American Chemical Society.

SAACI Beefsteak Party

A beefsteak party, highlighted by five skits and four musical numbers presented under the title "Anniversary Antics . . . (Antiques)," with members of the organization participating, was put on by the Salesmen's Association of the American Chemical Industry, at the Henry Hudson Hotel, New York, Oct. 17.

Following the show and dinner, life membership scrolls in the association were presented to John A. Chew of John A. Chew, Inc., New York; William F. George of Hooker Electrochemical Co., New York; George Short of Witco Chemical Co., New York; B. T. Bush of the Bush Aromatics Division of Dow Chemical Co., Hoboken, N. J., and to Williams Haynes, former publisher of *Chemical Markets* and author, lecturer and consultant. Mr. Haynes presented the scrolls to old-time members of the organization, which this year is celebrating its 30th anniversary. Scrolls were presented in

absentia to Dr. F. G. Zinsser of Zinsser & Co., New York; to H. B. Prior of Prior Chemical Co., New York; S. F. Higgins, who retired from Zinsser & Co.; Joseph F. Hollywood of Edward S. Burke Co., New York, and to August A. Wasserscheid, retired from Mallinckrodt Chemical Works, New York.

Mr. Haynes was introduced by Paul W. Hiller of International Minerals and Chemical Corp., New York, president of SAACI. Mr. Hiller read the account of the founding of the organization. Edward A. Bush of Bush Aromatic Div. presented the scroll to his father, B. T. Bush.

Weisman to Europe

J. L. Weisman, manager of export sales of Felton Chemical Co., Brooklyn, sailed recently on the *Ile de France* for Europe, where he plans to spend several months at the offices of Felton Company France in Versailles consulting with directors of the French company. Mr. Weisman also plans to visit Felton agents in Switzerland, Holland, Belgium and Sweden.

D&O Personnel Changes

Personnel changes announced recently by Dodge & Olcott, Inc., New York, include the appointment of Kenneth W. Hartley as manager of the Chicago branch office, succeeding Frank S. Topper, who retired after 31 years with the company. Mr. Hartley has been a member of the D&O Chicago staff since 1949. Added to the Chicago staff is William Kissel, D&O representative in Dallas, and a veteran of 15 years with the firm. No successor in Dallas has been named as yet.

Named to the post of manager

New La Pine Salesmen

The following salesmen were appointed recently by Arthur S. La Pine Co., Chicago: George Petro to cover Wisconsin; Jay Jones, Iowa; Don Miller, Illinois; William Moulton, Minnesota, and Edward R. Walsh, Kentucky.

Hooker Assigns Miller

Harris C. Miller has been assigned to the sales territory comprising upper New York state and western Pennsylvania, it was announced recently by Hooker Electro Chemical Co., Niagara Falls, N. Y. A graduate chemical engineer from Worcester Tech., Mr. Miller has been with the company since 1941. Since 1949 he has been in sales work both in New York City and in the sales offices at Niagara Falls, where he is making his headquarters. Prior to his sales activities, he served in various chemical engineering capacities including process study engineer, and in special plant engineering and production assignments.

of the foreign sales department is Raymond B. Williams, a member of the D&O New York office staff for 11 years. He replaces Wilbur S. Deming who has resigned to enter the brokerage business.

Frank A. Murdock is the new branch manager of Dodge & Olcott's San Francisco office, succeeding Chester Bryson, who has resigned to enter the field of ceramic tile sales. Mr. Murdock's territory includes, in addition to the San Francisco area, Washington and Oregon, and Vancouver and Victoria in British Columbia.

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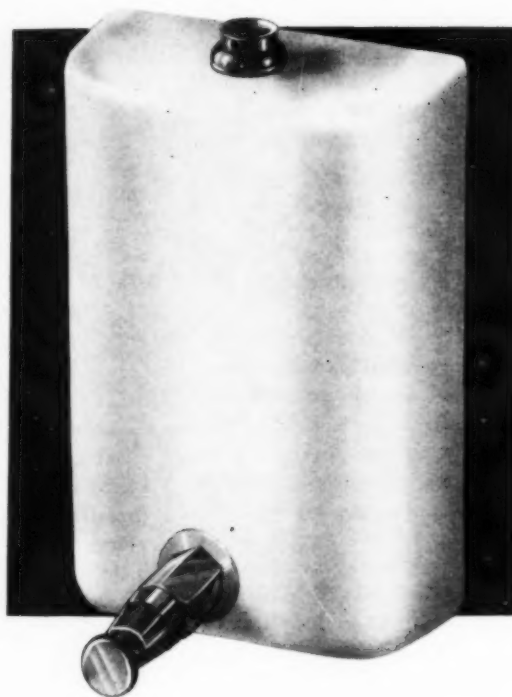
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CSMA Meeting Program

PAPERS dealing with product analysis, marketing and application are among those to be featured at the 38th annual meeting of the Chemical Specialties Manufacturers Association, at the Hotel Mayflower, Washington, D. C. Dec. 3-4. Details on the program, including titles of some of the papers to be presented, were released recently by H. W. Hamilton, C.S.M.A. secretary.

The program of the two-day meeting falls into two categories: general discussion sessions, scheduled for Monday afternoon, Dec. 3 and Tuesday morning, Dec. 4, and meetings of the five divisions of which C.S.M.A. is composed. Divisional meetings are to be held the morning of Dec. 3, and the afternoon of Dec. 4.

Besides discussion sessions, there will be a meeting of the board of governors of the association on Sunday, Dec. 2, on which day also there are to be meetings of scientific, administrative, and marketing committees, as well as advance registration and the president's reception for new members, Sunday evening, in the association suite.

On Monday and Tuesday, Dec. 3 and 4, there are to be group luncheons, which will be addressed by prominent figures in public or business affairs. Open house in company suites will be the social event of the evening of Dec. 3, while the banquet on the following night will climax and conclude the official meeting of the association. A field trip to the U. S. Department of Agriculture's experiment station at Beltsville, Md., where a discussion program and short trip through the station have been arranged for, will take place on Dec. 4.

Association business including the election and installation of new officers and the installation of divisional chairmen will also take place at the 38th annual meeting of C.S.M.A., and plans will be discussed for celebrating the organization's 40th anniversary at its annual meeting to be held in Wash-

ington two years hence.

Program details for Monday, Dec. 3, as released late last month, include the following:

Aerosol Division:—"Reflection of Quality Control in the Aerosol Industry" by R. J. Peterson of Continental Filling Co., Danville, Ill.; "Merchandising Aerosols" by Lee J. Shackelford of Kinetic Chemicals Division, E. I. du Pont de Nemours & Co., Wilmington, Del., and R. Uhl of Batten, Barton, Durstine & Osborne, New York advertising agency; a discussion of marketing problems and formal reports of the scientific committee and sub-committee are also slated to be given at this session.

Disinfectant and Sanitizers Division:—"Detergent - Sanitizer—How Good Is It?" by Dr. N. E. Lazarus, Lazarus Laboratories, Buffalo, N. Y.; "Development and Uses of Milmer I," by W. A. Clark and L. W. Sessions of Monsanto Chemical Co., St. Louis; reports of the scientific and chemical analysis committees; and remarks by W. G. Reed, Chief, Insecticide Division, U. S. Dept. of Agriculture, Washington, D. C.

Insecticide Division:—"The Federal Insecticide, Fungicide and Rodenticide Act," by Dr. E. L. Griffin, Assistant Chief, Production and Marketing Administration, U. S. Department of Agriculture, Washington, D. C.; "Supply of Containers for the Insecticide Industry," by Thomas L. Brennan of American Can Co., New York; Symposium on emergency controls — insecticidal chemicals — with Philip Groggins, Chief, Agricultural Chemicals Section, National Production Authority, presiding (this may be switched to the general session

**Chemical Specialties Manufacturers Association
to meet at Mayflower Hotel, Washington, D. C.,
Monday and Tuesday, December 3 and 4. Papers on
marketing and product application to be given.**

Monday Afternoon, Dec. 3); "Companion Line Sprayers and Dusters" by Earl D. Anderson, National Sprayer and Duster Assn., Chicago, reports of the scientific and defense committees and sub-committee; "Washington Developments" by John D. Conner, C.S.M.A. counsel (may be switched to general session afternoon of Dec. 3).

Soap, Synthetic Detergents and Sanitary Chemical Products Division:—"Evaluation of the Foam of Soaps and Detergents," by Dr. John Ross, Colgate-Palmolive-Peet Co., Jersey City, N. J.; "Present Trends in Cotton Detergency Testing" by Dr. John M. Lambert, General Aniline & Film Corp., Easton, Pa.; "Cleaners and Dermatitis," by Dr. Louis Schwartz, consultant on dermatitis, Washington, D. C.; "Evaluation of Commercial Surfactants," by Dr. H. L. Sanders of Ninol Laboratories, Chicago; "Automatic Liquid Soap Production," by R. J. Ballentine and W. S. Jessop, U. S. Sanitary Specialties Corp., Chicago.

Waxes and Floor Finishes Division:—"Absorption Spectra of Waxes" by Andrew Dingwall; "Ammonia Soluble Resins," by H. J. Mellan of Durez Plastics & Chemicals, Inc., N. Tonawanda, N. Y.; "New Wax Emulsifiers," by Dr. R. B. Trusler, Davies-Young Soap Co., Dayton, O. A paper on silicones is also scheduled to be delivered at this session but the name of the speaker is not available as yet.

The general session, following luncheon at which there will be a speaker, will hear the president's address, and reports of the secretary, treasurer and other officers, as well as a review of late developments by such

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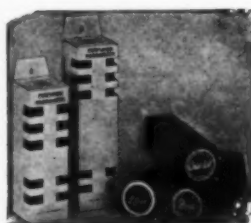
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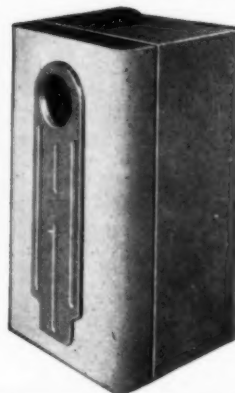
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On Tuesday morning, Dec. 4, the board of governors of the association meets to consider emergency activities. There will also be a continuance of the general session from the afternoon of the previous day. The group luncheon on Dec. 4, at which time new officers are to be installed, will also feature a guest speaker.

Divisional meetings will be held on the afternoon of Dec. 4. Tentative program topics for the various divisions include:

Aerosol:—"Use of Aerosols Against Stored Products Insects," by Dr. L. S. Henderson of the U. S. Department of Agriculture; "Aerosol Anti-perspirant Formulations," by Dr. F. T. Reed of Kinetic Chemicals Division; "Determination of Water in Aerosols," by Dr. R. A. Fulton of the U. S. Department of Agriculture, Beltsville, Md.; "The Analysis of Moisture in Aerosol Formulations," by Dr. F. T. Reed and Dr. R. C. Downing of Kinetic Chemicals Division; "Aerosol Evaluation Against Houseflies and Roaches," by A. C. Miller, Arnold Mallis and R. L. Sharples of Gulf Oil Co., Pittsburgh.

Insecticide Division:—"Comments on the Physiology of Resistant Houseflies," by F. H. Babers, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture; "Rearing the Stable Fly for Laboratory Tests," by E. J. Campau and G. J. Bakers, and F. D. Morrison, Standard Oil Co. of Indiana, Whiting; "Recent Developments in Livestock and Barn Sprays," by E. F. Knipling, Chief, Division of Insects Affecting Man and Animals, Bureau of Entomology and Plant Quarantine, U. S. Dept. of Agriculture; "Value of Allethrin in Insect Control," by R. C. Roark, In Charge Insect Investigation, B.E.P.Q., U.S.D.A., Beltsville; "An Appraisal of the Toxic Hazards of Some Economic Poisons," by Dr. S. W. Simmons, and Wayland J. Hayes, Jr., Technical Development Services, Communicable Diseases Center, U. S. Public Health Service, Savannah, Ga.; "Effectiveness of Various Ratios of Piperonyl Butox-

ide and Pyrethrins Against German Roaches," by Eileen J. Incho, U. S. Industrial Chemicals, Inc., Baltimore.

Disinfectants and Sanitizers Division:—"Phenol Coefficient by Logarithmic Dilution Method," by A. Haldane Gee, Irving L. Leidenberg and L. C. Cartwright of Foster Dee Snell, Inc., New York; "New Germicidal Applications of Iodine" by Dr. H. Terry of General Dyestuff Corp., New York.

Soap, Detergents and Sanitary Chemical Products Division:—"Variables in Fatty Acids which Affect Clarity and Viscosity of Potash Soap Solutions," by L. L. Luther and N. V. Fitzgerald, Wilson-Martin Division, Philadelphia; "Sequestering Action of Polyphosphates," by L. C. Dormuth, Pennsylvania Salt Manufacturing Co., Philadelphia; "Corrosion Control in Detergents with Sodium Silicates," by E. A. Robinson, Diamond Alkali Co., Painesville, O.; "Floor Cleaners" by Milton Klein, State Chemical Co., Cleveland.

Waxes and Floor Finishes Division:—"Problems Arising in Maintenance of Hard Wood Flooring Installations," by F. H. Lyons, E. L. Bruce Co., Memphis; test surfaces for floor waxes, problems in installation and maintenance of asphalt tile and vinyl tile floors, the Brazilian wax situation, a wax testing clinic and a discussion of Federal floor wax specifications are also scheduled to be covered at this session, as is "Construction and Maintenance of Concrete Floors for Service in Industrial Buildings," by C. C. Singleton, Portland Cement Co., Philadelphia. There will also be a report on the manufacturing of floor wax by the General Services Administration of the government.

Prior to each divisional meeting the chairman will make a brief address. Following the meetings of divisions on Tuesday afternoon, Dec. 4, officers elected at the mid-year meeting are to be installed.

A past presidents club of C.S.M.A. is to be formed at the Washington meeting, an organization meeting for which will be held Tuesday afternoon, Dec. 4.

The 38th mid-year meeting is

to be held at the Copley Plaza Hotel, Boston, June 8-11, which marks a change from original plans calling for the meeting on those dates in Detroit.

New Textile Fungicide

A new combination fungicide has been developed recently by Nuodex Products Co., Elizabeth, N. J., to provide mildew resistance to cotton duck used for tents, canvas containers, etc., in accordance with government specification MIL-D-10860. This product, called "Nuodex Copper QN-18%," is said to be easy to incorporate in total treating compositions since it is a readily dispersible paste that flows at room temperature. It combines copper hydroxy naphthenate and copper 8-quinolinolate in one product. In practice, it will mean to textile proofers and manufacturers the saving of time, labor, and expense involved in preparing the combination themselves, which often entails grinding and dispersing the fungicides.

Other products which the government specifies should be protected in this manner include: tarpaulins, barrack bags, arctic sleeping bags, belts, leggings, and truck covers or tops. Also treated are various weights of duck used for work gloves and shoes with canvas uppers, as well as light weight duck used in laminated clothing.

Monsanto Names Therrien

The appointment of Alfred L. Therrien as field representative in the upper New York state district for the plastics division of Monsanto Chemical Co., St. Louis, with headquarters in Springfield, Mass., was announced recently by Charles Lichtenberg, assistant general sales manager. Mr. Therrien succeeds Edwin V. Hellyar, who was recently named assistant sales manager of sheet materials. Mr. Therrien was employed in the general offices of Fiberloid Corp., in 1935, prior to its purchase by Monsanto, later becoming an expeditor in the planning department. He served with the U. S. Army from 1941 until March, 1946, when he returned to Monsanto as a sales correspondent in the order department.

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Statement of the ownership, management, and circulation required by the Act of Congress of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1940 (Title 39, United States Code, Section 233) of Soap and Sanitary Chemicals, published monthly at New York, N. Y., for October 1, 1951.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Mac Nair-Dorland Co., Inc., 254 West 31st St., New York 1, N. Y.; Editor, Frank J. Reilly, 254 West 31st St., New York 1, N. Y.; Managing Editor, Wayne E. Dorland, 254 West 31st St., New York 1, N. Y.; Business Manager, Thomas Morgan, 254 West 31st St., New York 1, N. Y.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

signed IRA P. MAC NAIR, Publisher

Sworn to and subscribed before me this 26th day of September, 1951.

(SEAL)

HARRIET LEVINE

(My commission expires March 30, 1952.)

Expanding in Southwest

Plans to expand its operations in the southwest by 50 percent next year were revealed by W. S. Jessop, president of U. S. Sanitary Specialties Corp., Chicago, on a recent business trip to Dallas, Tex. Mr. Jessop made the trip to obtain a new warehouse required for the expanded sales program contemplated by the company for the coming year. He conferred with Harry E. Seium, division sales manager, at the company's present warehouse and division headquarters at 118 Jackson St. in Dallas.

As soon as warehouse facilities are decided upon, Mr. Seium will be made southwest division manager of Texas, Arkansas, Oklahoma, Louisiana and New Mexico. Mr. Seium is a native of Chicago and has been with U. S. Sanitary Specialties Corp. since 1932.

New Chlordane Rules

An interpretation (19) of the regulations for the enforcement of the Federal Insecticide, Fungicide and Rodenticide Act regarding the labeling of household insecticides containing chlordane was issued recently by the Production and Marketing Administration of the U. S. Department of Agriculture. The new interpretation in an introductory paragraph points out that while certain formulations have been effective against roaches and certain other crawling insect pests, the chemical is toxic and must be handled with care. Recent experimental findings, it continues, have tended to emphasize the chronic hazards from repeated small exposures to chlordane either orally, by direct contact, or by breathing its vapors. For this reason certain restrictions have been placed on formulations that may be used and on methods of application.

Accordingly, on use limitations the U.S.D.A. has ruled that labeling must show that household products containing chlordane are intended for use only against roaches, waterbugs, silverfish, ants, carpet beetles or brown dog ticks in premises, or such other insects as the director of the Livestock Branch may find to be controllable within the limitations of

formulations and directions for use prescribed in the new interpretation.

The new interpretation also provides that:

1.) The concentration of the insecticide must be sufficiently high to be effective against the pest species. 2.) Maximum concentrations accepted for diluted products are 2.5 percent by weight for petroleum distillate sprays and water emulsion sprays, and 5 percent by weight for powders. If other insecticidal ingredients are present which have either acute or chronic poisoning characteristics, the amount of chlordane shall be reduced in proper proportion. 3.) Specific directions limit the applications of household products containing chlordane to restricted area (spot applications) in the interest of safety against prolonged chronic toxicity. Applications to large areas of walls, floors, shelving, cabinets and ceilings, or other room surfaces are not acceptable. The use of fine mist sprays of any kind (space sprays or aerosols) is not accepted. Treatment of clothing, bedding, beds, mattresses, pillows or furniture is not acceptable. Applications for control of bedbugs or fabric pests in furniture are unacceptable. No contamination of food or claims for safety or non-toxicity are accepted.

Tumax, Inc. Incorporates

Tumax, Inc., Lafayette, La., sanitary supply firm, filed articles of incorporation with the Office of the Secretary of State at Baton Rouge, La., recently, listing capital stock at 398 shares having no par value.

New vacuum attachment that connects to standard Unico Floor machines introduced recently by United Floor Machine Co., Chicago. Known as Unico "Dry-Vac," it picks up dust and dirt during polishing, steel-wooling and sanding operations. Unit can be quickly and easily attached to standard Unico floor machines. Sleeve-type rubber bumper protects machine and wall surfaces.



Du Pont Cuts Pesticides

Price reductions, averaging about 11½ percent, were announced recently by E. I. du Pont de Nemours & Co., Wilmington, on its "Marlate" methoxychlor and "EPN-300" insecticides. Expanded usages of these insecticides, resulting in increased sales volume, make the price cuts possible, the company stated.

New "Pride" Premium

A chenille dusting mitt is being promoted as a free premium to purchasers of "Pride" furniture polish made by S. C. Johnson & Son, Inc., Racine, Wis. The polish, one of the firm's most recent developments, contains silicone.

Kelly Joins Pennsalt

Frank J. Kelly recently joined the laundry and dry cleaning division of Pennsylvania Salt Manufacturing Co., Philadelphia. He has been assigned a portion of the New England territory, principally the state of Maine. He is making his headquarters in Philadelphia.

New Kelite Quarters

Kelite Products, Inc. of Texas, Dallas, recently moved into new offices and warehouse at 136 Leslie St. The organization, which distributes industrial chemicals and steam cleaning equipment, serves as general headquarters for a seven-state area. Kelite now has its own truck for local deliveries, and the new 8,000 square foot building features a truck stop in front and a railroad spur in the rear. It is a one story, brick and tile structure and fire-proof throughout. Office space is air conditioned. R. C. Martin is general sales manager of Kelite's central division with branch offices in Dallas.

Shave Products

(From Page 41)

- 55) Young, E. G.: *Chem. Specialties Mfrs. Assn. Proc.*, June 1950, p. 42
- 56) DiGiacomo, V.: *Drug & Cosmetic Ind.* 69:30, 1951
- 57) Pantaleoni, R.: *Chem. Specialties Mfrs. Assoc. Proc.*, Dec. 1950, p. 53

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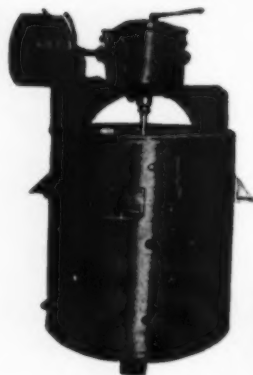
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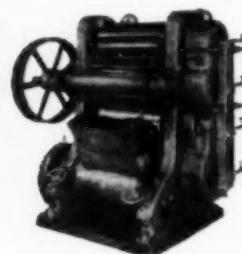
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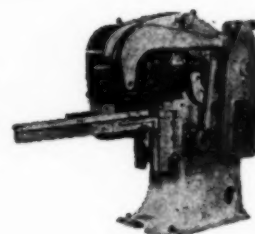


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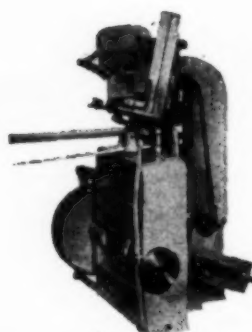


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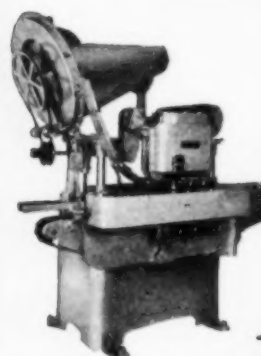
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Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.

TALE ENDS

C SMA which is short for the Chemical Specialties Manufacturers Assn., Inc. will not meet in Detroit in June, 1952 as planned. The meeting has been switched to the Copley Plaza in Boston, June 8-10. The grapevine reason for the switch is said to be that old bugbear, "corkage" on liquor consumed in rooms and suites which is so violently opposed by associations everywhere. Anyway, we hear that the Detroit hotel insisted,—and CSMA departed.

Jim McInnes, Commercial Solvents sales demon and volunteer fireman of wide repute, has joined ten thousand other blokes on the list of those receiving the latest version of the "Spanish prisoner's letter." Only this time the "prisoner" is in a Mexican hoosegow, but he still has the same satchel full of money hidden away and all you do is send him some dough now and later you split the hidden hoard with him fifty-fifty. The writer of this blurb also got one of these recent missives from Mexico. His uncle got one from Spain forty years ago. Senor McInnes says that he did not send any dough,—but we're suspicious.

It happened in Detroit. The American ballet was giving its initial 1951 performance in that city. The stage had been recently done over with new linoleum and waxed to a beautiful finish. Prancing out onto the stage, the ballerina and some of her satellites skidded and landed on their shapely fannies with loss of both dignity and aplomb. The ballet management screamed "sabotage!" What the dancers said is best left out of print. Page Ludox!

The impact of the speeded-up defense program is due to hit us full force along about the late summer or fall of 1952, they tell us. Then the same old scramble to find help especially for service jobs will descend upon us again after a lull of six months or so. So brace your feet, gentle reader, and don't get excited about empty soap dispensers in the gents' room. They'll be here again!

For the second time in three years, a subscriber to whom our editorial department had sent some information, wrote us a letter of thanks. Such gratitude is so unique that we have taken the trouble to figure out the percentage of "thank you" letters received over the past several years. It's 0.043%.

Sixty-six swans were recently taken from the Thames River near London by the Royal Society for the Prevention of Cruelty to Animals and each given a shampoo by a swan beauty expert. It seems that a ship in the river discharged

some bilge oil which got the swans all messed up and left them a dirty grey color. Now, according to an old British law, Thames swans belong to the King. And these oil-stained birds were no credit to His Majesty. Hence the detergent treatment and a return of the birds to the river immaculate and snowy white.

When a copy writer for radio and television cigarette advertising hears his own stuff, we have often wondered what happens. Does he try to justify himself to his own soul, or just blush? And what about the writers of certain soap advertising, too?

Liquid soap and paper towels as provided by Uncle Sam in the lavatories are now the order of the day for Federal employees in the St. Louis area, according to D. H. Hoelscher, local manager of the

U. S. Public Building Service. No more fancy-dan bar toilet soap and linen towels for those who slave for Uncle S out St. Louis way, at least not at government expense. Also as an economy measure, windows hereafter will be washed once a year instead of twice. Ain't government economy wonderful!

Tremendous progress in soap and detergent manufacture in Latin America, both by native firms and by American companies with factories there, has changed household washing habits of most populations among our neighbors to the south. Panama seems to be one of the few countries remaining on the old yellow laundry soap basis. One Panamanian soaper makes 90 per cent of all the soap sold in that country, 4,000,000 lbs., and it's all laundry soap.

Wanna win a television set for free? All you have to do to win one while at the convention of the Soap Assn. in New York, January 21-22, is show up and on time for general discussion sessions. If your ticket happens to be the one drawn out of the hat then you win a free TV.

Touchdown!!!



GOOD interference. Good blocking. That's what advertising supplies to any successful sales staff. Prepares the way for your salesmen. Just like selling to the field of soaps, detergents, cleansers, floor products, polishes, insecticides, disinfectants, and allied chemical specialties where you can best prepare the way for your salesmen by regular advertising in

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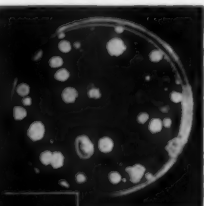
Revolutionary! New!

SAN-I-SUDS

Cleans Floors Antiseptically



This plate contains a few drops of solution taken from a pool in which this marvelous new cleaner-sanitizer was used. SEE THE DIFFERENCE!



Can you truthfully say a floor is "clean" when it is actually covered with thousands of potentially dangerous bacteria? Clean floors should be germ-free floors. SAN-I-SUDS is science's answer to the problem of ridding floors not only of grease, dirt and grime but also of germs! Ordinary soaps do not kill bacteria, they simply move them about the surface being cleaned and transfer some of them into the scrub bucket.

SAN-I-SUDS solutions when used for cleaning floors destroys the bacteria on the floor as well as those deposited in the scrub bucket!

SAN-I-SUDS is the answer when your customer wants his floors really cleaned—clean of dirt and clean of germ life. SAN-I-SUDS with its disinfecting action combined with wonderful cleaning properties is definitely a "must" for industrial use today.

CLEANS FAST—LEAVES NO FILM—NICE TO USE



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Please rush a sample of SAN-I-SUDS, the revolutionary new floor cleaner, with the "Built-in" Germicide. Also complete information.

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